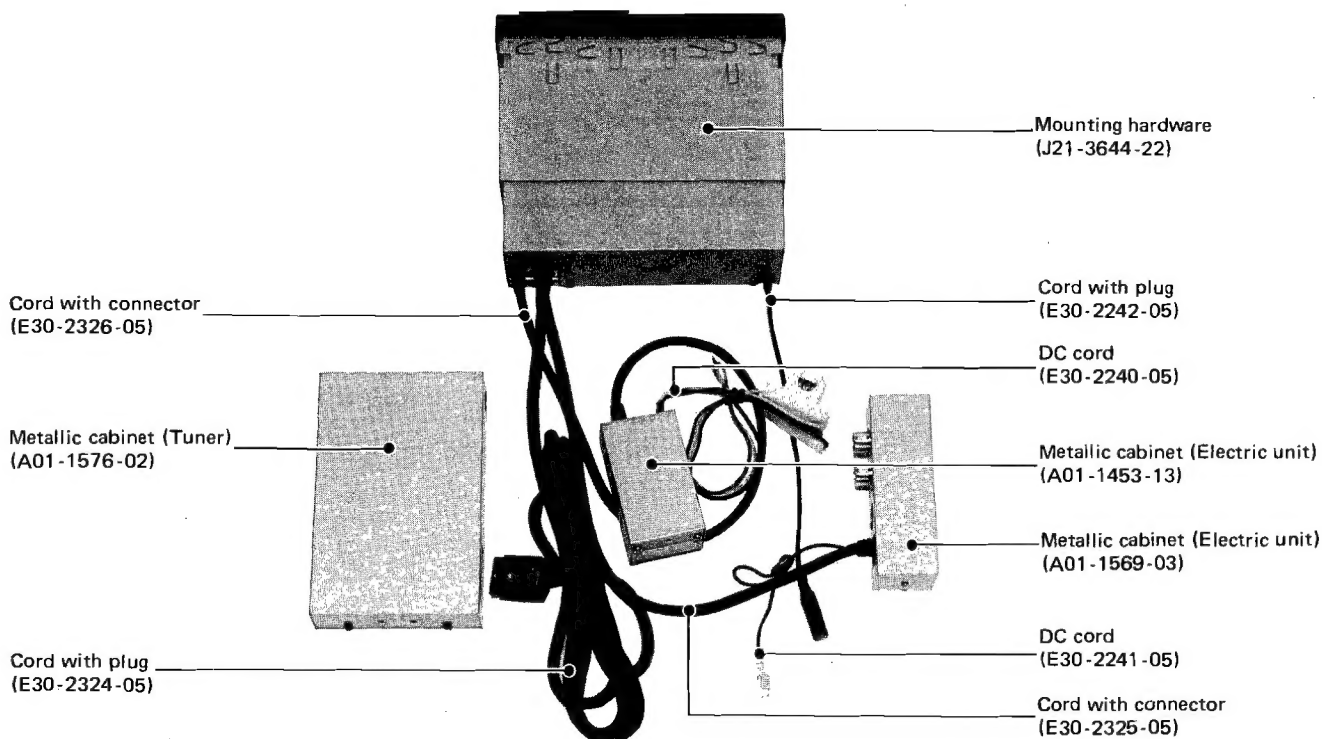
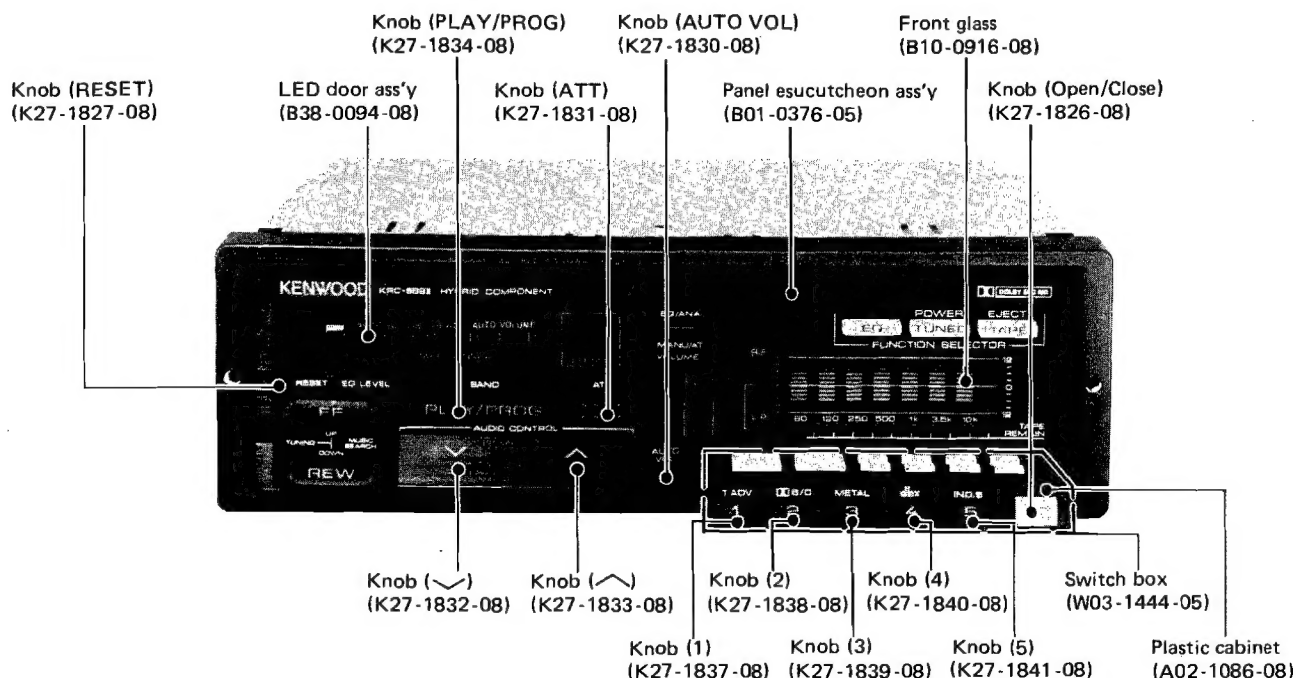


# KRC-999II

## SERVICE MANUAL

# KENWOOD

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## CONTROLS AND INDICATORS

**[TAPE]: Fast Forward/Rewind switch**  
Each switch permits Fast Forward or Rewind operation. To release the operation, press the Play/Program switch.

**[TUNER]: Tuning Up/Down switch**  
Press the Up switch to shift to a higher frequency. Press the Down switch to shift to a lower frequency. A single pressing of the switch allows the frequency to vary one step at a time. When the switch is kept pressed the frequency changes continuously. When the knob is moved once, the frequency is changed by 200 kHz in FM mode and 10 kHz in AM mode.

**[EQ]: Equalizer level Up/Down switch**  
Press the Up switch to increase the equalizer level and the Down switch to decrease it. The equalizer level changes by one step when the switch is tapped once, and changes continuously when it is kept pressed.

**Reset button**  
When the installation and all the wirings are finished, press this button.  
Not usually used. However, when the microprocessor (micro-computer) malfunctions, press this button using a sharp-pointed object (such as a pencil). When this button is pressed, the unit is reset to its initial state. Therefore, all the memories and clock are erased and need to be adjusted.

**Cassette tape slot**  
Insert the cassette tape into this slot with the cassette shell opening at the right until it reaches to the end of the slot. In this condition, tape will be automatically loaded when the Tape switch is pressed or push the cassette further to engage manual loading.

**Volume indicator**  
Indicates the present volume level. As the volume level increases, more indicator segments light, and in the same way, as volume level decreases, more indicator segments go off.

**[TAPE]: Stereo reception indicator**  
Lit when a stereo broadcast is received.

**Equalizer curve/Spectrum analyzer display**  
Displays the equalizer curve or the spectrum analyzer.

**[TAPE]: Tape remaining indicator**  
Shows the remaining time of the tape, in 9-segment indicators.

**[TUNER]: Signal strength indicator**  
The left four segments of the 9-segment indicators light according to the signal strength of the receiving broadcast station.

**Open/Close switch**  
Press this switch to open the control drawer. Pressing it again closes the drawer. With the drawer open, when the ignition key is turned OFF, the control drawer will be closed automatically.

**Attenuator switch**  
When this switch is set to ON, the volume indicator blinks and the volume instantly drops by -20 dB. When this switch is pressed again, the indicator goes off and the previous volume resumes.

**Auto volume switch**  
When this switch is pressed ON after the optimum volume level is set, the volume will change automatically according to noise in the car.

**[TUNER]: Preset station switches (1 - 5)**  
One switch can memorize one of each FM1, FM2, FM3 and AM.

**[EQ]: Equalizer curve preset switches (1 - 5)**  
An equalizer curve can be preset for each switch.

**[TAPE]: Play/Program switch**  
If this switch is pressed during playback, the tape direction is reversed. If this switch is pressed during Fast Forward or Rewind mode, the Fast Forward or Rewind mode is released and the unit enters Play mode.

**[TUNER]: Band selector/Indicators**  
Selects reception band. Indicates the current receiving band.  
→ FM1 → FM2 → FM3 → AM

Operation and indication when the Tape switch is ON.  
Operation and indication when the Tuner switch is ON.  
Operation and indication when the Equalizer switch is ON.

## CONTROLS AND INDICATORS

### [TUNER]: Manual/Auto switch

This switch is used to select the tuning mode; Auto 1 (seek), Auto 2 (preset seek) or Manual.



### [EQ]: Equalizer/Analyzer select switch

This switch is used to select the display mode; graphic equalizer curve display or spectrum analyzer display.

### Equalizer switch

Press this switch when adjusting the graphic equalizer or other equalizer-related operation. This switch can be activated when the Tape or Tuner switch is ON.

### Tuner switch

This switch is used to turn the tuner ON and OFF. When the Equalizer or Tape switch is ON, pressing this switch enables control of the operations related to the tuner.

### Tape/Eject switch

This switch is ON, and the indicator lights, when tape play is engaged. When the Equalizer or Tuner switch is ON, pressing this switch enables control of the operations related to tape play. During tape play, when this switch is pressed, a loaded tape will be ejected.

### [TAPE]: Tape running direction indicator

Shows the running status of the tape.

### Audio control ^ (Up)/v (Down) switches

Press the Up switch to increase the volume and the Down switch to decrease it. The volume changes by one step when the control switch is tapped once. It changes continuously, but slowly when it is kept lightly pressed, and continuously, but quickly when the switch is kept firmly pressed.

### [TAPE]: Music search indicator

Indicates the number of tunes to be skipped when the tape is quickly advanced.

### [TUNER]: Preset station channel indicator

Indicates the channel number of the preset station being received.

### Balance/Fader indicator

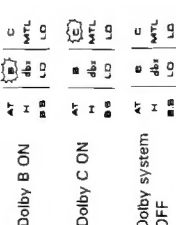
Indicates the results Balance control adjustment, and that of the Fader control adjustment.

### [TAPE]: Tape advance switch

When this switch is pressed ON, up to 9 tunes after, or 8 tunes before, the current tune can be skipped with the music search operation. To search for a tune ahead of the current position, press the fast-forward switch, and to search for a tune before the current position, press the rewind switch. Press the switch the number of times corresponding to the number of tunes to be skipped.

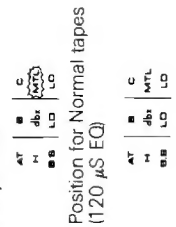
### Dolby NR switches

Set this switch to ON when playing back a tape recorded with Dolby NR system.



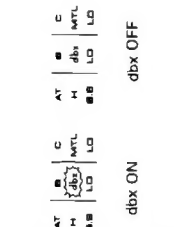
### Metal selector (Tape selector)

Position for Metal, Chrome or High Bias tapes (CrO<sub>2</sub>) (70  $\mu$ S EQ)



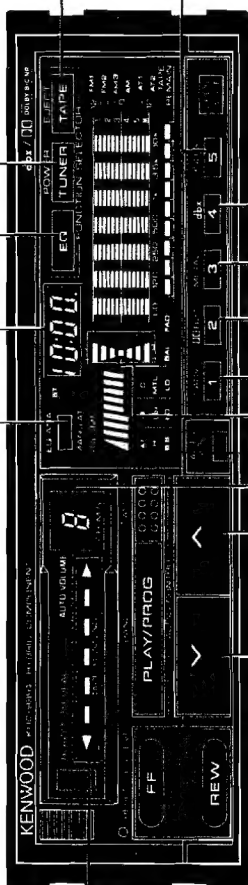
### dbx switch

Set this switch to ON when playing back a tape recorded with dbx system.



### Index Scan switch

When this switch is pressed, the tape is fast-forwarded and the beginning of each tune (approx. 10 seconds) is played back from the next tune one after another. This operation is continued even when the tape running direction is reversed at the end of the current side. When the desired tune is heard, press this switch again or press Play/Program switch to release this operation.



## CONTROLS AND INDICATORS

### IEQ: Equalizer band select switches

These switches are used to select the equalizer band to be adjusted. Press "<" to move the adjustable band (the blinking indicator) to the left and press ">" to move it to the right.

### High/Low select switch

This switch is used to select the operating sensitivity, between High and Low, for the Auto Volume function.



### Fader switch

When this switch is set to ON, the indicator illuminates and fader adjustment can be performed with the Audio Control Up/Down switches. Pressing the Up switch increases the volume level of the rear speakers, and pressing the Down switch increases the volume level of the front speakers.

### Balance switch

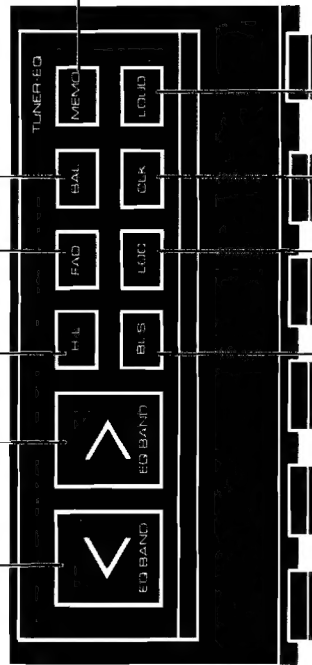
When this switch is set to ON, the indicator illuminates and balance adjustment can be performed with the Audio Control Up/Down switches. Pressing the Up switch increases the volume level of the right speakers, and pressing the Down switch increases the volume level of the left speakers.

### [TUNER]: Memory switch

Used to program a desired station into the memory presets. When this switch is pressed, an "8" display blinks in the preset channel indicator for 5 seconds. During this 5-second period, press the selected switch to store the current listening station.

### IEQ: Memory switch

Used to store the adjusted equalizer curve into memory. When this switch is pressed, an "M" indicator blinks for 5 seconds. During this 5-second period, press the selected switch to store the current equalizer curve.



### Blank skip switch

With this switch ON, when a non-recorded blank section continues for more than about 10 seconds, the tape is automatically fast-forwarded to the beginning of the next tune.

### [TUNER]: Local switch

When this switch is set ON, interference, distortion, and noise in a strong signal area will be effectively reduced.

### Clock switch

When this switch is pressed during Tuner mode, the frequency display is changed to clock display. Pressing it again returns to the frequency display. Even though in the Clock mode, when tuning is performed, the display shows the frequency, and about 5 seconds later the clock display resumes.

### Loudness switch

When listening at a low volume, press this switch. The loudness circuit will compensate for the human ear's decreased response.

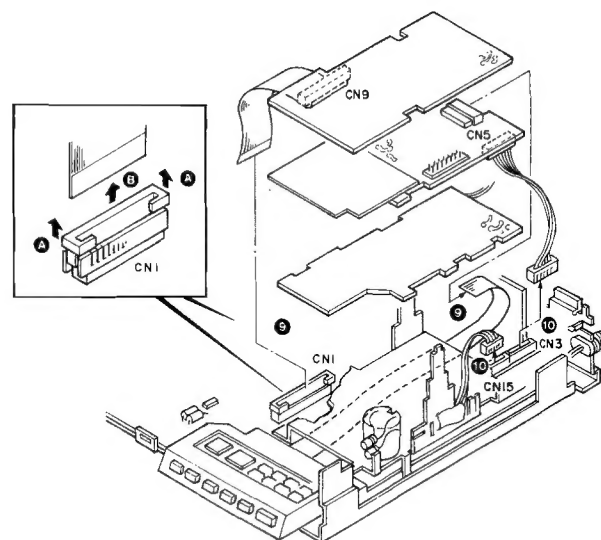
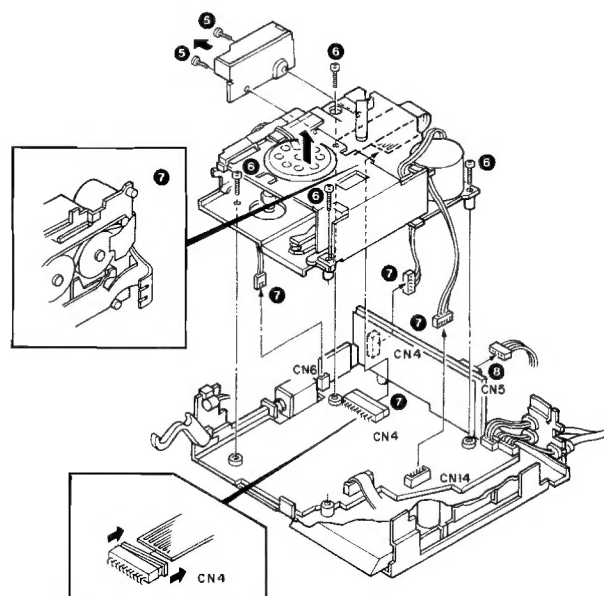
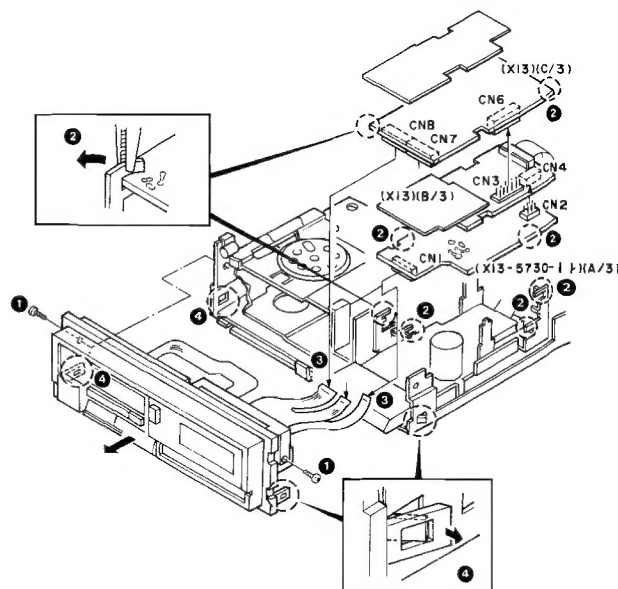
## DISASSEMBLY FOR REPAIR

### DISASSEMBLY FOR REPAIR

#### 1. Front Panel, Cassette Mechanism, PC Boards

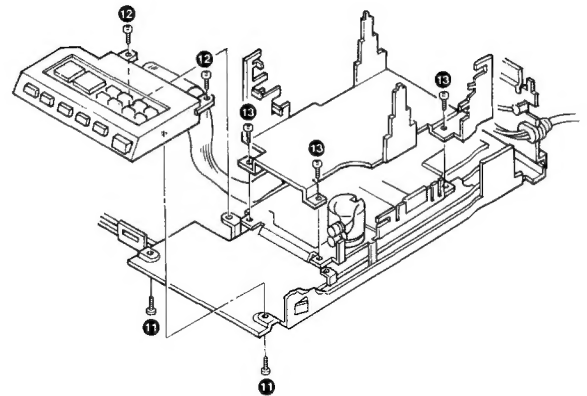
(Remove the case before proceeding to the following.)

1. Remove 1 screw from each side of the front panel (1).
2. Bend and disengage the 5 lugs on the metallic holder fixing the PC boards of the SUB-CIRCUIT Unit (1) (X13-5730-11) (A/3, B/3, C/3), disconnect the connections of CN2 and CN4 and of CN3 and CN6, and lift the three PC boards (2).
3. Disconnect the flexible cords from CN7 and CN8 of the SUB-CIRCUIT Unit (1) (X13-) (C/3) and from CN1 of the (A/3) (3).
4. Disengage the 2 lugs fixing the front panel onto the chassis, and take out the front panel in the direction of the arrow (4).
5. Remove the 2 screws fixing the ELECTRIC Unit (X25-3010-11) (D/4), and take out the PC board together with the metallic holder (5).
6. Remove the 4 screws fixing the cassette mechanism, and lift the mechanism (6).
7. Disconnect connectors CN6 and CN14 on the ELECTRIC Unit (X25-) (A/4) and CN4 on the DOLBY Unit (X14-2190-11), and disconnect the flexible cord on the back of the mechanism from CN4 on the ELECTRIC Unit (X25-) (A/4) (7).
8. Disconnect connector CN5 on the DOLBY Unit (X14-) (8).
9. Disconnect the flexible cords from CN1 on the ELECTRIC Unit (X25-) (A/4) and from CN5 on the SUB-CIRCUIT Unit (1) (X13-) (B/3) (9).
10. Disconnect connectors CN3 and CN15 on the ELECTRIC Unit (X25-) (A/4) (10).

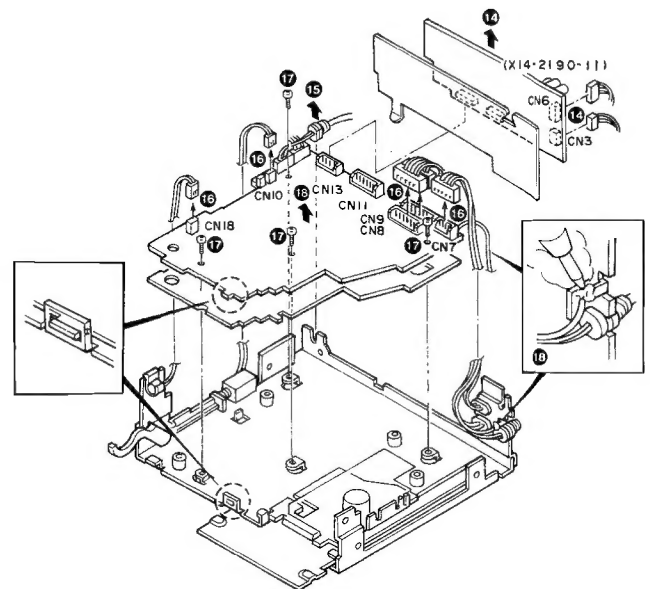


## DISASSEMBLY FOR REPAIR

11. Remove the 2 screws fixing the switch box to the sub-chassis from the bottom side (11).
12. Similarly to above, remove the 2 screws from the upper side (12).
13. Remove the 3 screws fixing the metallic holder to the chassis caulking ass'y, and take out the metallic holder (13).



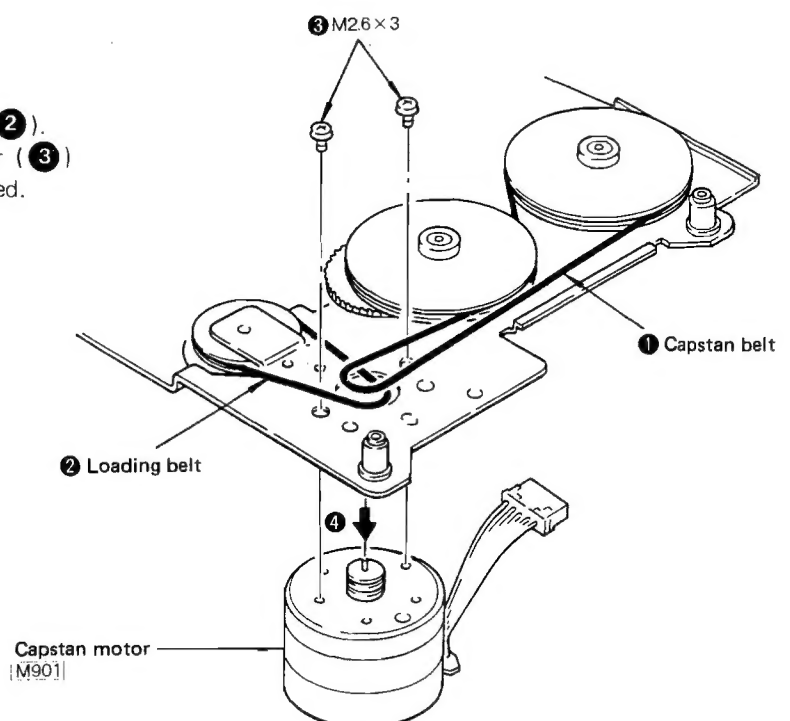
14. Disconnect connectors CN3 and CN6 on the DOLBY Unit (X14-), disconnect its connection (CN11, CN13) with the Electrical Unit (X25-) (A/4), and take out the DOLBY Unit in the direction of the arrow (14).
15. Disconnect the remote control cord from CN12 of the ELECTRIC Unit (X25-) (A/4) (15).
16. Disconnect connectors CN7, CN8, CN9, CN10 and CN18 on the ELECTRIC Unit (X25-) (A/4) (16).
17. Remove the 4 screws fixing the ELECTRIC Unit (X25-) (A/4) onto the chassis caulking ass'y (17).
18. Remove the soldering of the GND wire, and take out the ELECTRIC Unit (X25-) (A/4) in the direction of the arrow (18).



## 2. Mechanism Ass'y

### 2-1. Capstan motor

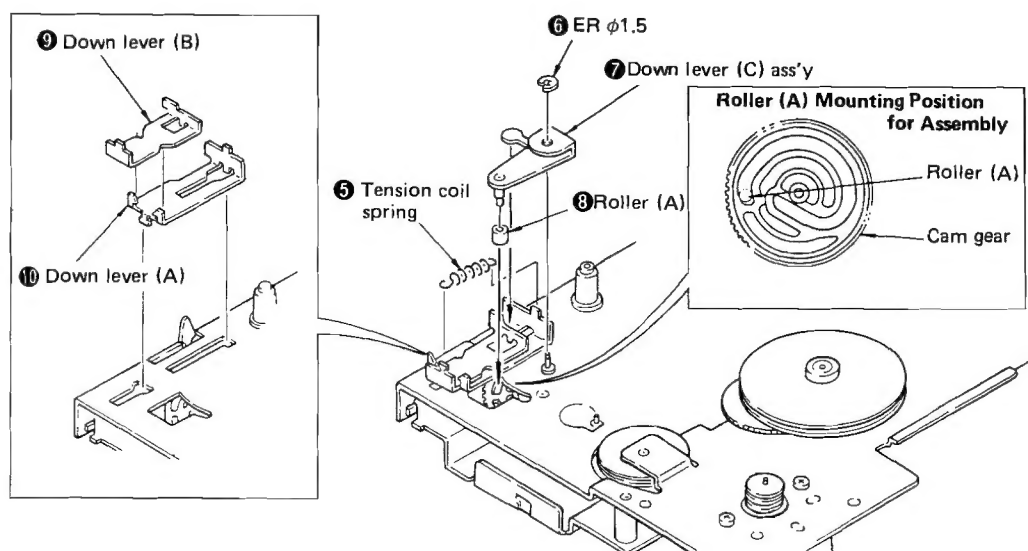
1. Remove the capstan belt and loading belt (1) (2).
2. Remove the 2 screws fixing the capstan motor (3) (4). Now the motor can be removed and replaced.



## DISASSEMBLY FOR REPAIR

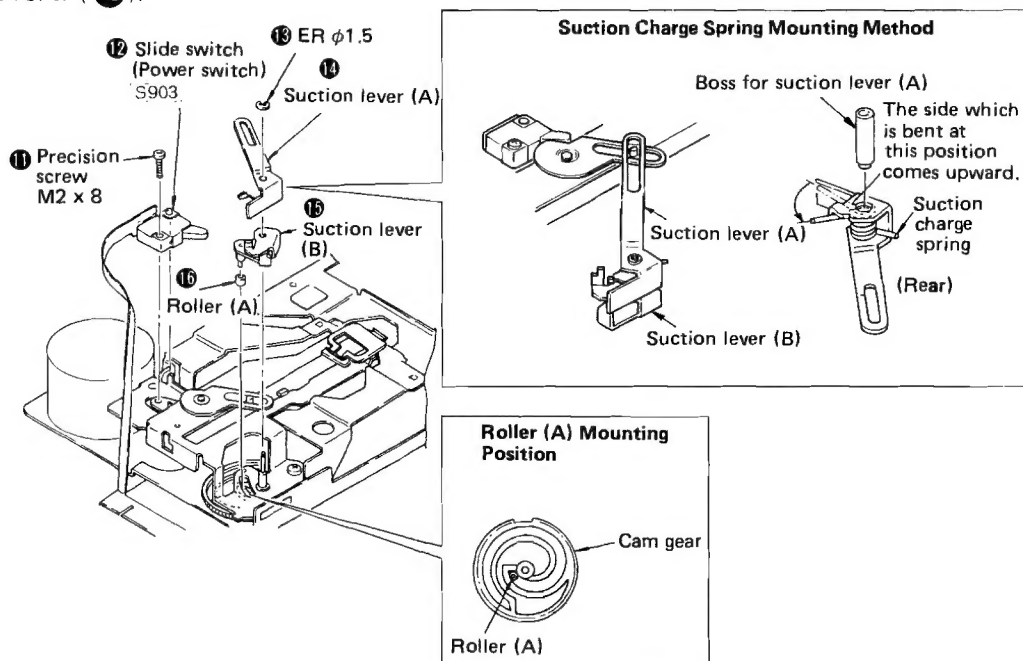
### 2-2. Down levers A, B

3. Remove the spring (5), and remove the E ring fixing the down lever C ass'y (6).
4. Pull out the down lever C (7).  
The roller A is attached to the down lever C ass'y. Be sure not to lose the roller (8).
5. Now, the down lever A and down lever B can be taken out (9) (10).



### 2-3. Cassette holder

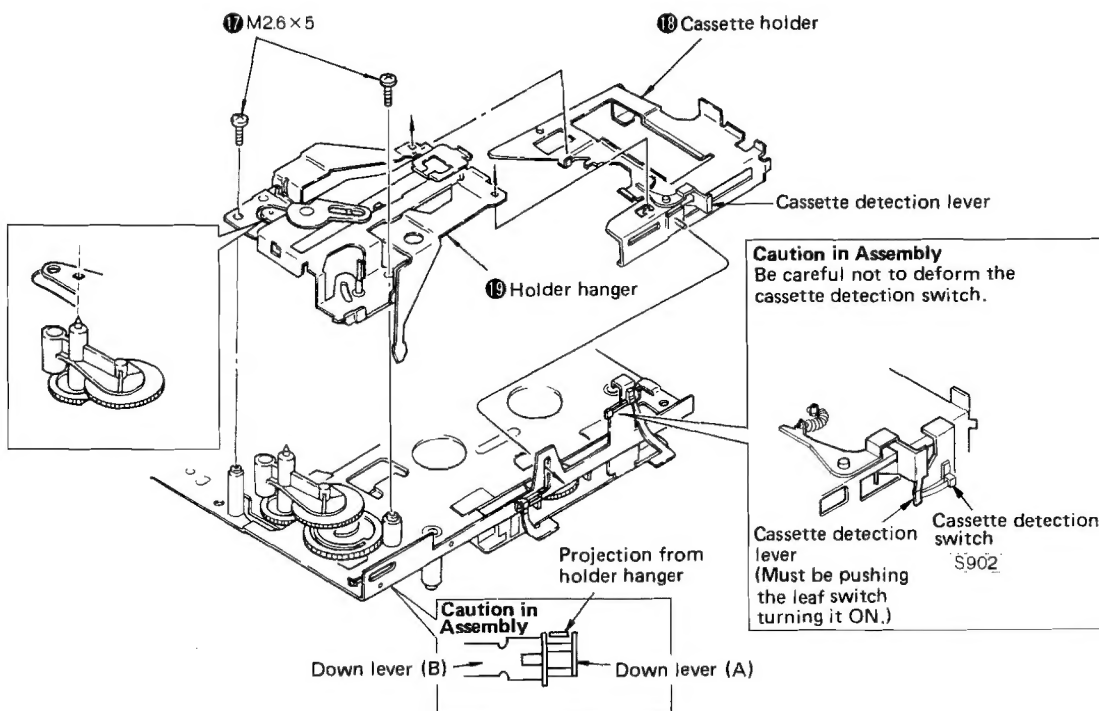
6. Remove the screw fixing the Power switch (S903) on the cassette mechanism, and take out the switch (11) (12).
7. Remove the E ring fixing the suction lever A, and pull up the lever (13) (14).
8. Pull out the suction lever B (15).  
The roller A is attached to the suction lever B. Be sure not to lose the roller (16).





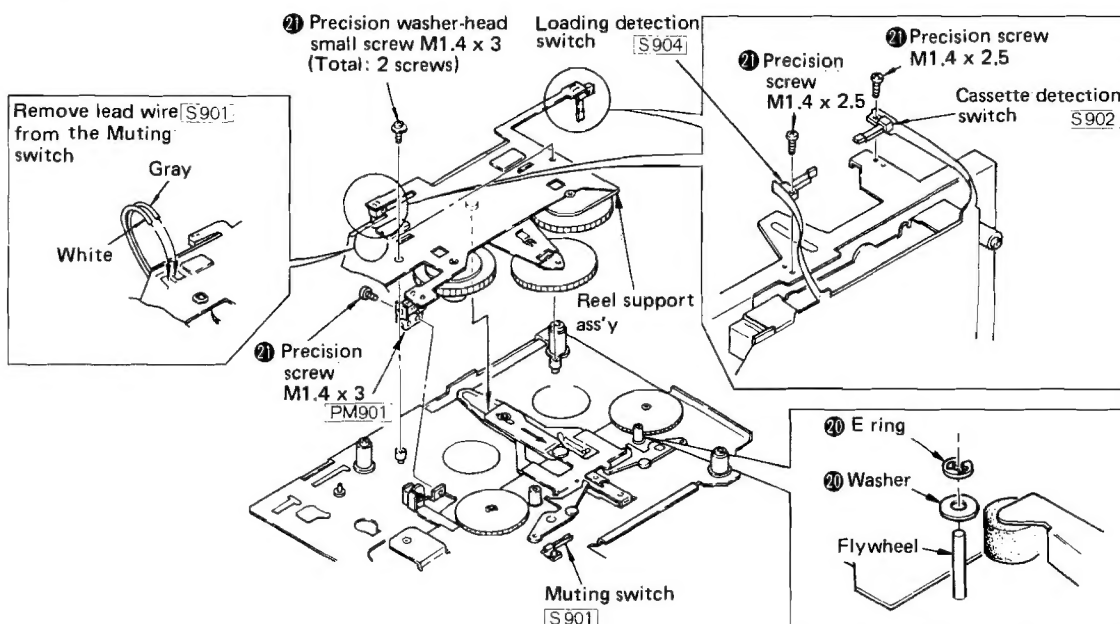
## DISASSEMBLY FOR REPAIR

9. Remove the 2 screws fixing the holder hanger (17).
10. Ensuring that the cassette holder guide boss is inserted into the slit on the mechanism chassis and paying attention to the cassette detection lever and cassette detection switch (S902), lift the cassette hanger and cassette holder (18) (19).



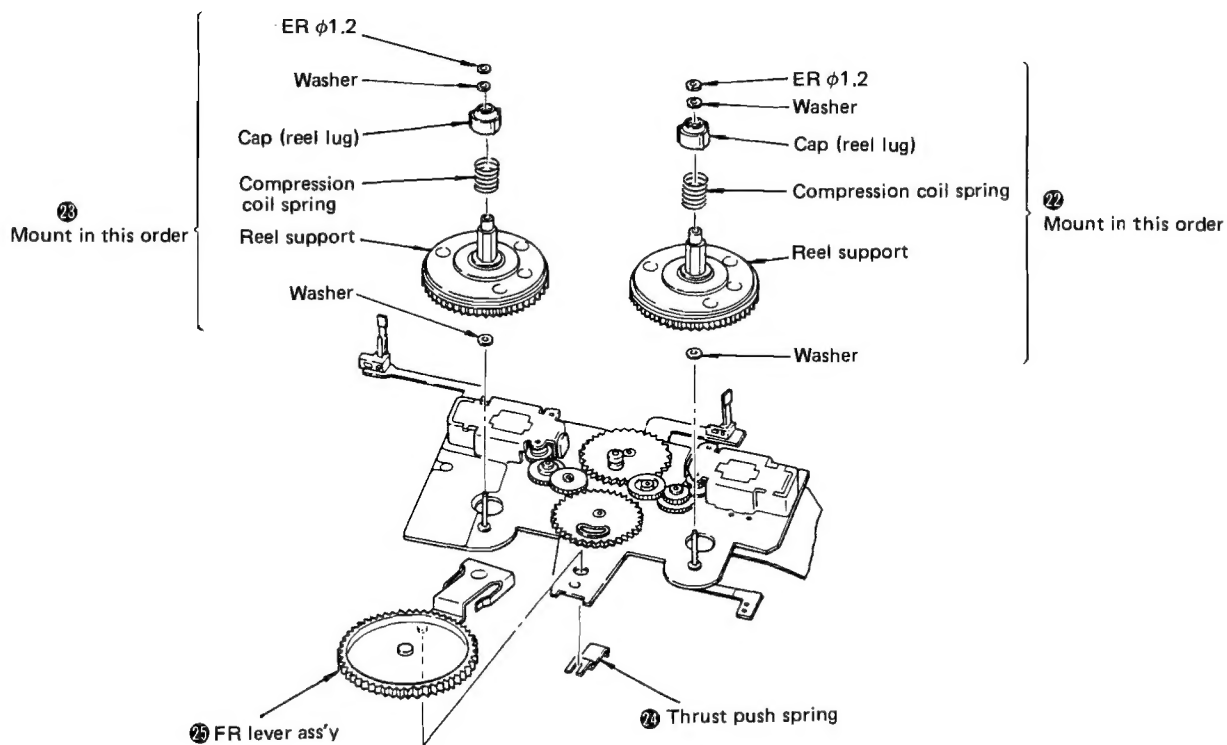
### 2-4. Control chassis

11. Remove the E ring and washer from the flywheel ass'y (20), then remove the screws of the leaf switch and solenoid (21). Be careful not to damage the capstan section which comes in contact with tape.

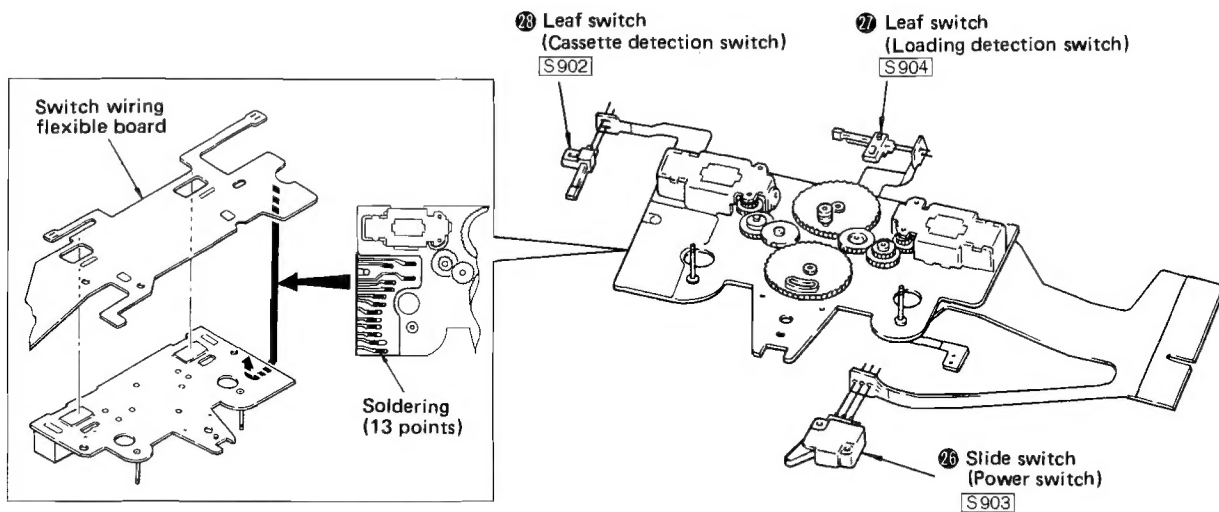


## DISASSEMBLY FOR REPAIR

12. Remove the reel support together with the E ring on the top and the washer on the bottom ( 22 ) ( 23 ).
13. Remove the thrust push spring, and take out the FR lever ass'y ( 24 ) ( 25 ).

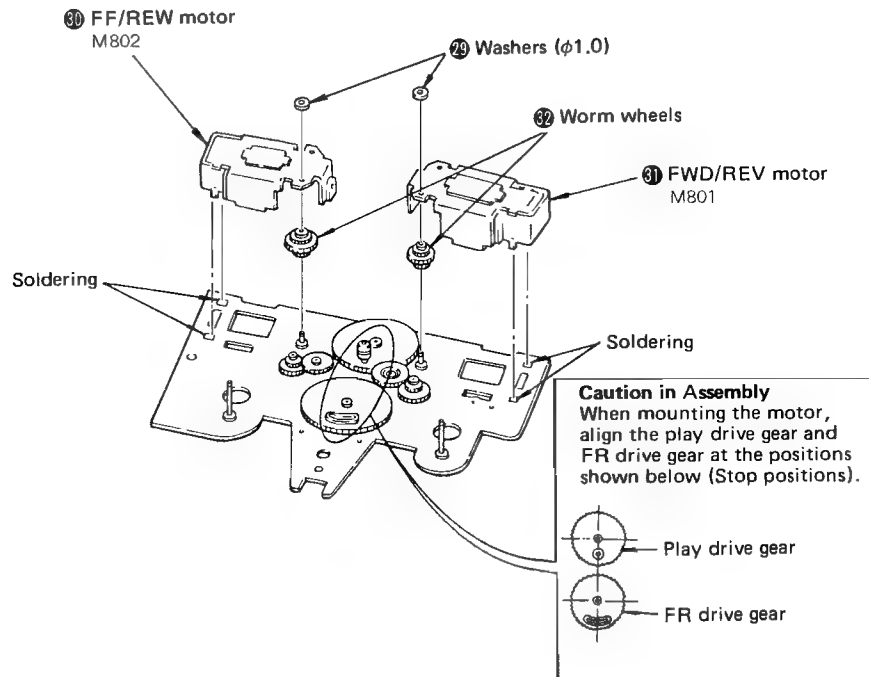


14. Remove the leaf switches, solenoid, etc. on the flexible board. ( 26 ) ( 27 ) ( 28 ).

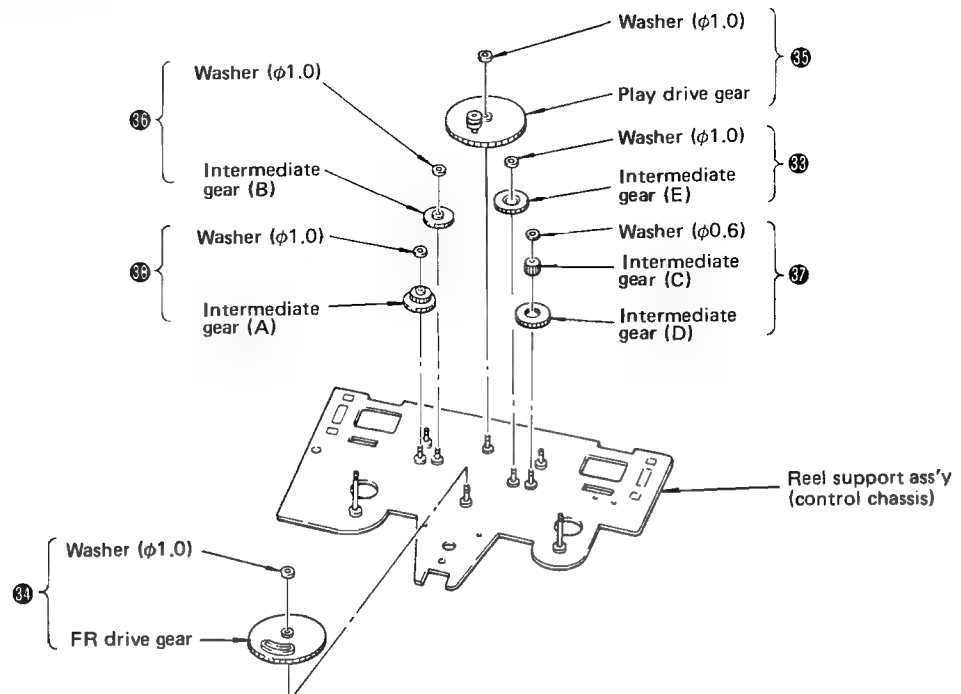


## DISASSEMBLY FOR REPAIR

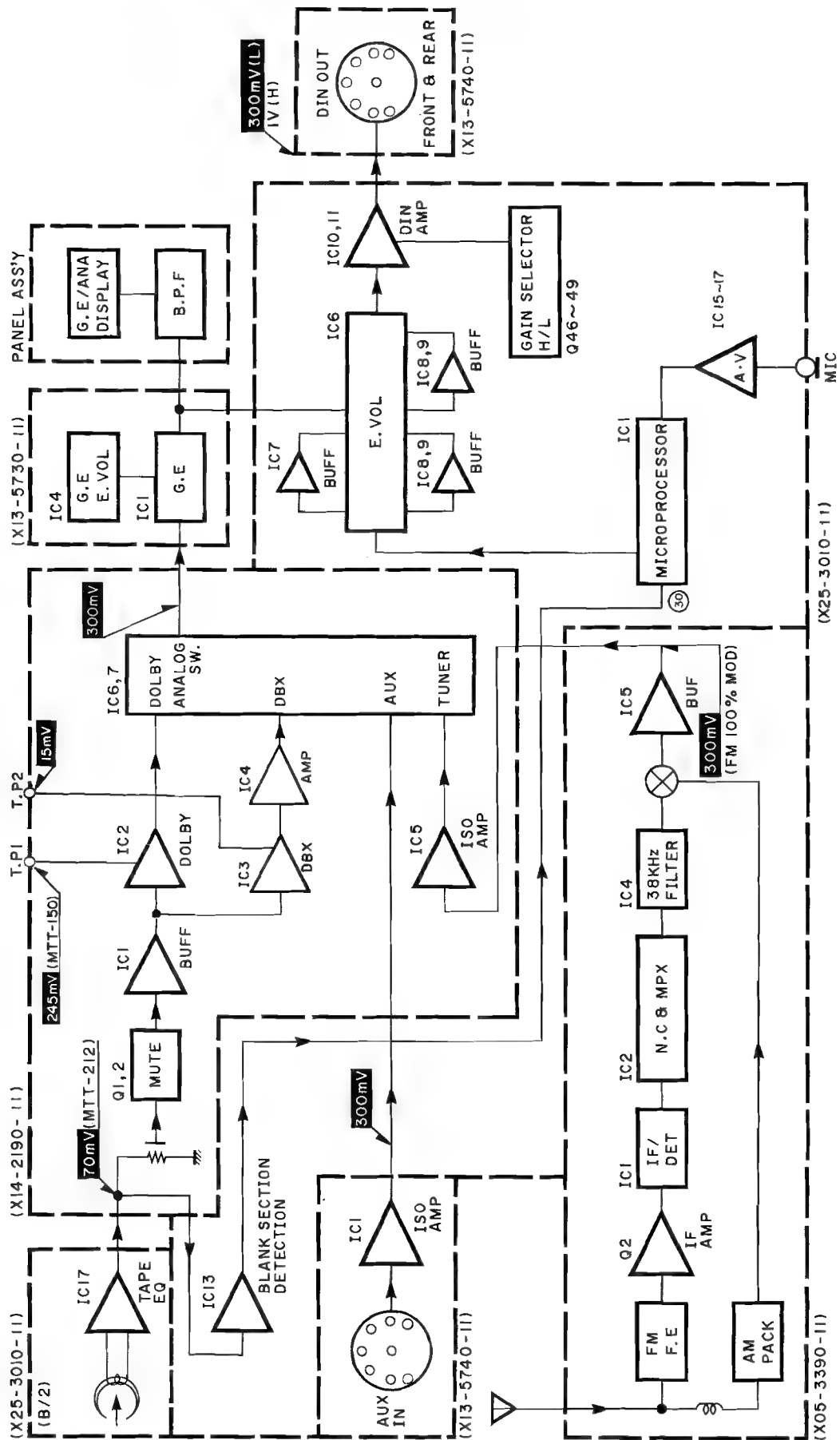
15. Remove the motor washers and soldering, and take out the motor (29) (30) (31).
16. Remove the worm wheel gears (32).



17. Remove the washers of the intermediate gear E, FR drive gear, play drive gear, intermediate gear B, intermediate gear C, intermediate gear D and intermediate gear A, and remove the gears from the reel support ass'y (control chassis) (33) to (38).



## BLOCK DIAGRAM



## DESCRIPTION OF COMPONENTS

### SUB-CIRCUIT UNIT (1) (X13-5730-11)

Component	Application/function	Operation/condition/compatibility
IC1	G.EQ.	7-band hybrid IC for G.EQ. Used in combination with IC2.
IC2	G.EQ.	7-band electronic VR for G.EQ.
IC3	Reset IC	Used for system resetting of G.EQ microprocessor IC4.
IC4	G.EQ microprocessor	Microprocessor which controls the G.EQ volume display and key inputs.
IC5	G.EQ key input control	Inhibits G.EQ key inputs when INH is 'L'.
IC6,7	G.EQ key input control	M1 to M5, G/A, G.EQ, UP/DOWN key switches.
IC8,9	G.EQ key input control	G.EQ band f1 to f7 key switches, ME key switch.
IC10	G.EQ band UP/DOWN	Selects G.EQ band f1 to f7 according to data from X25-3010 IC1.
IC11,12	Display LED segment driver	
IC13	Display LED digit driver	
IC14	BCD decoder	Extends digit signals according to data from X25-3010 IC1.
IC15,16	TAPE and TUNER key control	TUNER and TAPE mode key switches.
Q1	Spectrum analyzer muting	Muting of audio signal for spectrum display.
Q2	Spectrum analyzer buffer	Buffer for audio signal for spectrum display.
Q3~5	G.EQ display power switch	Switch which controls G.EQ display power supply with ACC.
Q9,10	Reset switch	Switch which resets IC3 when the Reset switch on the panel is pressed.
Q11	Display control	ON when slide pocket is opened.
Q12,13	AT1, AT2 and MANU switch	AT1, AT2, MANU key switch.
Q14~19	Display LED digit driver	

### SUB-CIRCUIT UNIT (2) (X13-5740-11)

Component	Application/function	Operation/condition/compatibility
IC1	ISO amp	Isolation of AUX.
Q1	P-ANT driver	Goes ON when there is P-CON output, and supplies power to P-ANT.
Q2,3	P-ANT protect inhibit	Inhibits the P-ANT protection at the rise of ACC.
Q4	P-ANT protect	Goes ON when P-ANT is grounded, and turns Q1 ON for protection.
Q5,6	P-CON driver	Go ON for P-CON output to the later stage (amp, etc.).

### DOLBY NOISE REDUCTION UNIT (X14-2190-11)

Component	Application/function	Operation/condition/compatibility
IC1	Buffer	Buffer in the previous stage to Dolby IC and dbx IC.
IC2	Dolby	Dolby B/C decoder.
IC3	dbx	dbx decoder.
IC4	dbx output stage amp	Amplifies dbx output by 20.8dB.
IC5	ISO amp	Tuner-line isolation amp.
IC6,7	Analog switch	Switching of DOLBY, dbx, TUNER and AUX.
Q1,2	Muting	ON when muting tape output.
Q3	dbx ON/OFF	OFF in dbx mode.
Q4	dbx ON/OFF	ON in dbx mode.
Q5	Tape sound leakage inhibit	ON in TUNER or AUX mode.
Q6,7	AUX P-CON level converter	Conversion of AUX P-CON (microprocessor) into 9V.
Q8,9	TUNER P-CON level converter	Conversion of TUNER P-CON (microprocessor) into 9V.
Q10,11	Dolby B/C	ON in Dolby C mode.
Q12	Dolby ON/OFF	ON when Dolby is OFF.

## DESCRIPTION OF COMPONENTS

## ELECTRIC UNIT (X25-3010-11)

Component	Application/function	Operation/condition/compatibility
IC1	Master microprocessor	Controls the Slave microprocessor, EV (electronic VR), P-CON, display, key input, etc.
IC2	Slave microprocessor	Controls the cassette mechanism, pocket drive (motor), deck circuit (Metal, Dolby, FF/REW), etc.
IC3	Reset IC	Resets the Master and Slave microprocessors when VDD (5V) drops to the specified voltage (4.6V).
IC4	Mechanism control	Drives the cassette mechanism based on the control signals from the Slave microprocessor.
IC5	Pocket motor driver	Drives the pocket motor.
IC6	Electronic VR	Electronic VR for tone control, loudness, balance and volume.
IC7	Electronic VR (Tone control)	Tone control.
IC8,9	Electronic VR (Buffer)	Buffer.
IC10	Preamp	Output amplifier.
IC11	Preamp	Front-output preamplifier for fader.
IC12	Comparator	Shape the cassette mechanism rotation detection signal.
IC13	Tune select amp	Tune selection control amplifier.
IC14	Reference voltage	Bias voltage for auto-volume ICs.
IC15	Auto-volume	Full-wave rectification for the microphone amplifier and 2nd and 3rd LPF.
IC16	Auto-volume	Logarithmic amplifier buffer.
IC17	Auto-volume	Level-shift buffer.
IC18	Tape equalizer	Tape equalizer amplifier.
Q1,2		Prohibit door open/close at ACC OFF.
Q3	Lamp display	Turns the lamp inside the pocket ON/OFF.
Q4	Muting	
Q6	Motor +B	Turns Q39 and Q40 ON when ACC goes ON.
Q7	Tuner AGC inverter	Used when the tuner pack is attached.
Q9	Tuner LO/DX inverter	
Q10	Inverter	
Q11	Tuner IN	Detects ON/OFF of the external tuner (microprocessor inverter).
Q12,13	P-CON IN	Detects ON/OFF of P-CON (microprocessor level shifting).
Q19~21	Buffer	Buffer for sending tuner PLL data at low impedance.
Q22	Speaker driver	Drives speakers.
Q23	Muting driver	Drives Q50 and Q51.
Q24	Reset	Combined with IC3 and resets the Slave microprocessor.
Q25,26	Reset	Reset switch for the power to IC3 and Q24. Power is turned ON/OFF by the reset switch on the panel.
Q30	Remote control	External remote control signal buffer.
Q31	Tuner SD inverter	Used when the tuner pack is attached.
Q32	Tuner ST inverter	Used when the tuner pack is attached.
Q33,34	Cassette mechanism driver	Drives the cassette mechanism.
Q35~38	Cassette mechanism driver	Amplifies the current for used with the cassette mechanism driver.
Q39	Cassette mechanism +B	In combination with Q6, turns the cassette mechanism +B ON.
Q40	5V	In combination with Q6, turns the pocket motor +B, etc., ON.
Q41	Plunger driver	For holding door plunger.
Q42	Plunger driver	Drives Q41.
Q43	Plunger driver	Drives the door plunger.
Q44	Plunger driver	Drives Q42.
Q46~49	Gain selector	Switches the amplifier output voltage.
Q50,51	Muting	Mutes the output amp.
Q52,53	Muting	Muting.
Q54,55	ACC detector	Detects the rise of ACC above the specified voltage, and performs level shifting to 5V.
Q60~62	Tune select sensitivity switch	Changes the time constant during tune selection, playback and FF/REW.

## DESCRIPTION OF COMPONENTS

Component	Application/function	Operation/condition/compatibility
Q63,64	Tracking regulator	Supplies the auto-volume $\pm$ power simultaneously.
Q65	Auto-volume sensitivity switch	Switches the sensitivity of the auto-volume and microphone.
Q66	Logarithmic amp	In combination with IC16, functions as an logarithmic amp.
Q67	Buffer	Buffer.
Q70	Metal switch	Switches between METAL/NORMAL.
Q71	F/R switch	Switches between F/R.
Q72	5V AVR	5V AVR for microprocessors, etc.
Q73	9V AVR	9V AVR for display.
Q74	5V AVR	Darlington-connected to Q72.
Q75	9V AVR	Darlington-connected to Q73.
Q76	Protector circuit	5V circuitry short-circuiting protection circuit.
Q77	Protector circuit	9V circuitry short-circuiting protection circuit.
Q78	Protector circuit	Combined with Q76.
Q79	Protector circuit	Combined with Q77.
Q83,84	9V AVR	9V AVR for audio circuitry.
Q85	9V AVR	Darlington-connected to Q83 and Q84.
Q86,87		Turns off all lights at ACC OFF.
Q88	8V AVR	8V AVR for remote control.

### PANEL ASS'Y (A20-5295-05)

Component	Application/function	Operation/condition/compatibility
IC1,2	Spectrum analyzer/G.EQ display driver	

### TUNER UNIT (X05-3390-11)

Component	Application/function	Operation/condition/compatibility
Q1	LO/DX SW	ON for LO, OFF for DX.
Q2	IF amp	Amplification of IF.
Q3	FM S meter output buffer	Eliminates the influence from impedance variation in S meter line.
Q4	AFC SW	ON during reception, OFF during search.
Q5	ANRC cotrol	Discharges CRSC capacitor C11.
Q10	AM S meter output buffer	Eliminates the influence from impedance variation in S meter line.
Q11	FM LPF	Low-pass filter for FM Vt.
Q13,14	AM LPF	Low-pass filter for AM Vt.
Q15	SD inverter SW	ON when SD is present, OFF when not.
Q16	AM +B SW	ON when AM is selected.
Q17	FM +B SW	ON when FM is selected.
Q19	FM L ch buffer	Eliminates disturbance in post-stage LPF characteristics due to IC2 output impedance.
Q20	FM R ch buffer	Eliminates disturbance in post-stage LPF characteristics due to IC2 output impedance.
Q21	5V AVR	Power supply for IC3.
Q22	9V AVR	9V power supply for audio signal circuitry.
Q23,24	Tuner P.CON SW	ON in Tuner mode.
Q25,26	Muting	Audio output muting.
IC1	FM IF amp/detector	IF amplification, soft muting control, and IF detection.
IC2	Noise canceler and MPX	Noise canceling, ANRC cotrol, L/R demodulation.
IC3	PLL	Digital tuning PLL cotroller. Controlled by the serial data from IC1 in Power Supply unit (X25-3010-11).
IC4	Active LPF	Eliminates pilot and subcarrier components by cutting frequencies above 15kHz.
IC5	Output amp	Buffer amplifier for supplying tuner output to the main unit.

## CIRCUIT DESCRIPTION

### MASTER MICROPROCESSOR 75018G-599-1B

#### 1. General

This microprocessor has been designed mainly for use with car receivers, and controls the cassette deck section and also the tuner section using an external PLL.

This microprocessor operates in combination with Slave microprocessor 7507HG-517-22 which controls the cassette mechanism.

#### 2. Outline of Functions

##### 2-1. Cassette deck section

- Tune selection
  - Tune selection by skipping up to 9 tunes in forward/backward direction using T.ADV (with digital display).
  - Repeat playback which allows to play the same tunes several times.
  - Index scanning which plays the first 10 seconds of all tunes in a tape.
  - Blank skipping, with which cuing starts when a non-recorded blank has lasted for more than 15 seconds.
- Auto tuner call facility activates the tuner automatically during tape FF and REW operations.
- Dolby B/C switches.
- dbx switch.
- 9-point remaining tape indicator.
- 7-point running indicator and running direction indicator.
- Cassette standby facility starts tape playback automatically when the station being received by the tuner becomes weak.

##### 2-2. Audio section

The Volume, Balance, Bass, Treble and Fader are controlled using electronic VR TC9188F. The volume indicator is a 9-point, 2-digit digital display, and independent 7-point indicators are also provided for other functions. The Loudness is also controlled using an electronic VR.

- Muting reduces the audio volume by 20dB in an instant.
- Volume UP/DOWN with two speeds.
- Auto-volume facility always provides a constant feeling of volume to the user according to the external noise level (with load noise level meter).

##### 2-3. Tuner section

###### Clock function

- 12-hour display with AM/PM indication omitted.

###### Station selection

- Manual tuning: With step-by-step scanning or fast scanning by pressing the pushbutton switch.
- Auto tuning 1: The station is held once it is tuned in.
- Auto tuning 2: Preset stations can be searched upward or downward.

###### Preset station memory

- 5 memory buttons are provided for storing 5 stations per band, i.e. a total of 20 stations.

###### Memory facility

- Any station can be stored in the preset station memory by pressing the MEMORY switch then one of preset buttons 1 to 5.

###### Last-channel memory

- The last station which has been received is stored in memory for each band.

###### Auto memory

- Up to 5 receivable stations can automatically be searched and stored in the preset memory by pressing the the MEMORY switch then the UP switch. This upward seeking operation continues until all frequencies in the band have been scanned once, and the operation stops when the station stored in Preset 1 is received again. The operation is indicated by the preset indicator "P1". If no SD is detected while scanning frequencies, the seeking operation stops when the starting frequency is received again.

Frequencies

Destination	Receivable Frequency Range	Channel Space ( ) → manual tuning	Compared Frequency	IF
U.S.	FM 87.9~107.9MHz	200kHz (200kHz)	25kHz	+10.7MHz
	AM 530~1620kHz	10kHz (10kHz)	10kHz	+450kHz
Japan	FM 76.1~89.9MHz	100kHz (100kHz)	25kHz	-10.7MHz
	AM 522~1629kHz	9kHz (9kHz)	9kHz	+450kHz
General market	FM 87.9MHz~107.9MHz	100kHz (100kHz)	25kHz	+10.7MHz
	AM 522~1611kHz	9kHz (9kHz)	9kHz	+450kHz



## CIRCUIT DESCRIPTION

### 2.4. Graphic equalizer (G.EQ) section

The microprocessor itself does not include the G.EQ function. However, it has the G.EQ operation mode as well as the Tape and Tuner modes, and the key inhibit signal is output in the Tape and Tuner modes.

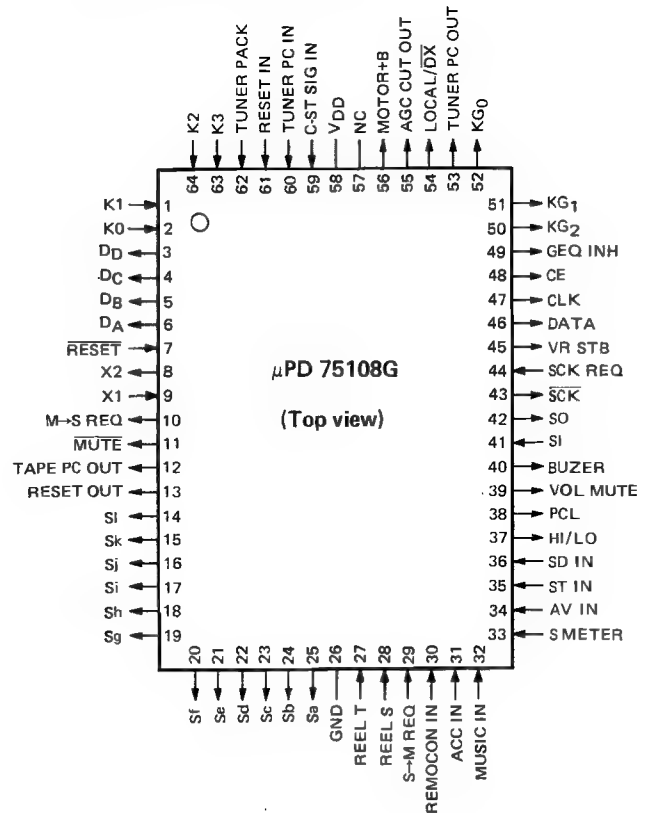
The G.EQ is controlled using a general-purpose microprocessor manufactured by Sanyo. This microprocessor has independent frequency select switches. As these switches are set to correspond to the UP/DOWN switch of our microprocessor, turning the UP/DOWN switch ON turns the frequency select switches ON so the frequencies can be selected. The following G.EQ functions are incorporated in the G.EQ control microprocessor.

- 7-band spectrum analyzer display.
- 5 preset equalizer curves.
- 2dB steps  $\pm 12$ dB variation  
( $\pm 10$ dB variation is also possible).

**Note:** When UP or DOWN is pressed in other timing than when the set point is flashing (indicating setting standby), the UP SW starts with f1 and DOWN SW with f7. Therefore, if there is no input for 5 seconds, the starting frequency is either f1 or f7.

### 3. Terminal Description

#### 3-1. Terminal configuration diagram

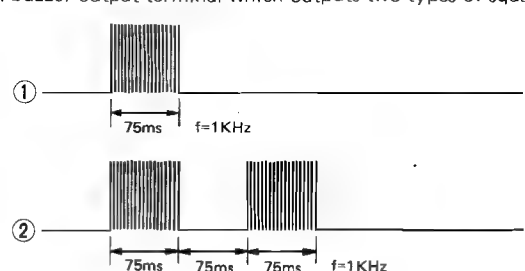


## CIRCUIT DESCRIPTION

3-2. Terminal description table

Pin No.	Symbol	Terminal Name	Description
1,2, 63,64	K0~K3	Key return signal inputs	Input terminals for return signal from the Dynamic key matrix. Each terminal is connected to a pull-down resistor.
3~6	DA~DD	Digit outputs	Sources of key-return and display signals. The 4-bit BCD output from $\mu$ PD4028D are converted into 10 digits.
7	RESET	Reset input	Microprocessor initialization terminal. The microprocessor executes initialization when it turns from "H" to "L".
8,9	X2,X1	X'tal oscillator	X'tal oscillator connection terminals (4.5MHz).
10	M→S REQ	M→S request signal	Communication request signal from the Master to Slave.
11	MUTE	Muting output	Output signal for muting shock noise occurring during PLL or mechanism operation. Active "L".
12	TAPE PC OUT	Tape power control output	Outputs P-CON signal during tape transport. Used as the TAPE PC OUT terminal for controlling both the signal system and PC. Basically goes "H" when a tape inserted. However, the level may go "L" during TUNER CALL.
13	RESET OUT	Mutual reset terminal	Output signal performing mutual resetting to the set in the previous stage.
14~25	Sa~SI	Segment signal outputs	Segment output signals.
26	GND	Ground	Connected to the ground.
27	REEL T	Reel pulse detector	Detects the forward reel pulse.
28	REEL S	Reel pulse detector	Detects the reverse reel pulse.
29	S→M REQ	S→M request signal	Communication request signal from the Slave to Master.
30	REMOCON IN	Remote control input	Detects the signal sent through the light receiver.
31	ACC IN	ACC detector	Input terminal which detects the Accessory switch position. "L" for backup mode.
32	MUSIC IN	Music detector	Detects if music signal is present. Active "H".
33	S METER	Signal meter detector	Divides 0 to 5V (VDD) in 8 sections (0.625V each) and detects the field intensities.
34	AV IN	Auto volume detector	Divides 0 to 5V (VDD) in 16 sections (0.3125V each) and detects the external noise levels.
35	ST IN	Stereo input signal	Detects whether the present broadcast is stereo, and inputs "H" when receiving a stereo broadcasting station. Even when the ST detection signal is "H", the display is turned OFF under the following conditions: <ul style="list-style-type: none"> <li>◦ With AGC CUT output.</li> <li>◦ When SD detection is "L".</li> <li>◦ In MW band.</li> </ul>
36	SD IN	SD input signal	During auto tuning (UP SEEK/DOWN SEEK and auto memory), detects whether a broadcasting station is received, and inputs "H" when a station is received.
37	HI/LO	AV High/Low switch	Switches the auto-volume sensitivity.
38	PCL	Reference frequency output	Reference output for X'tal deviation adjustment (1.05MHz).
39	VOL MUTE	Volume muting output	"H" when the volume data is $-\infty$ .

## CIRCUIT DESCRIPTION

Pin No.	Symbol	Terminal Name	Description
40	BUZER	Buzzer output	<p>Operation buzzer output terminal which outputs two types of square waves.</p>  <ul style="list-style-type: none"> <li>• Buzzer sound (1) beeps in the following cases: <ul style="list-style-type: none"> <li>◦ When all audio circuitry switches are ON.</li> <li>◦ When tape circuitry switches are ON in Tape mode.</li> <li>◦ During forward loading or inversion from reverse to forward.</li> <li>◦ When tuner circuitry switches are ON in Tuner mode.</li> </ul> </li> <li>• Buzzer sound (2) beeps in the following cases: <ul style="list-style-type: none"> <li>◦ During reverse loading or inversion from forward to reverse.</li> </ul> </li> </ul>
41	SI	Serial input	Input terminal for serial data from the Slave microprocessor.
42	SO	Serial output	Output terminal for serial data to the Slave microprocessor.
43	SCK	Serial clock	Output terminal for serial clock to the Slave microprocessor. Active "L".
44	SCK REQ	Clock request signal	Input terminal for serial clock request from the Slave microprocessor.
45	VR STB	Volume strobe	Output terminal for strobe signal to the electronic VR (TC9188F).
46	DATA	Data output	Output terminal for data to the electronic VR (TC9188F) and external PLL (LM7001).
47	CLK	Clock signal	Output terminal for clock to the electronic VR (TC9188F) and external PLL (LM7001).
48	CE	Chip enable	Chip enable output to the external PLL (LM7001).
49	GEQ INH	Graphic equalizer inhibit signal	Output terminal for inhibiting the G.EQ key-matrix. "H" when ACC is OFF.
50~52	KG0~KG2	Graphic equalizer	Output terminal for ON signals to the frequency select keys of the G.EQ. The keys for the 7 bands are turned ON with a simulative method using the 3-bit BCD output from $\mu$ PD4028B.
53	TUNER PC OUT	Tuner power control output	"H" when the tuner is ON and the signal circuitry is switched to the tuner. However, both TUNER PC and TAPE PC are "H" during tuner call.
54	Local/DX	Local/de-luxe switching output	Output terminal for receiving only local stations or not.
55	AGC CUT OUT	AGC CUT output	AGC CUT output terminal.
56	MOTOR +B	Motor power supply signal	Output terminal for motor power ON/OFF signal.
57	NC	NC	Not connected.
58	VDD	Power supply terminal	Device power supply terminal. When the terminal rises from 0V to 5V $\pm$ 10%, the microprocessor performs the power-on resetting internally, and all conditions are initialized.
59	C-ST SIG IN	C-ST signal detector	External tuner field strength detector terminal.
60	TUNER PC IN	Tuner power control detector	External tuner power control detector terminal.
61	RESET IN	External input detector	Detects the power control of the external set such as a CD player or DAT player.
62	TUNER PACK	Tuner pack detector	Detects if the tuner pack is present.

## CIRCUIT DESCRIPTION

### SLAVE MICROPROCESSOR 7507HG-517-22

#### 1. General

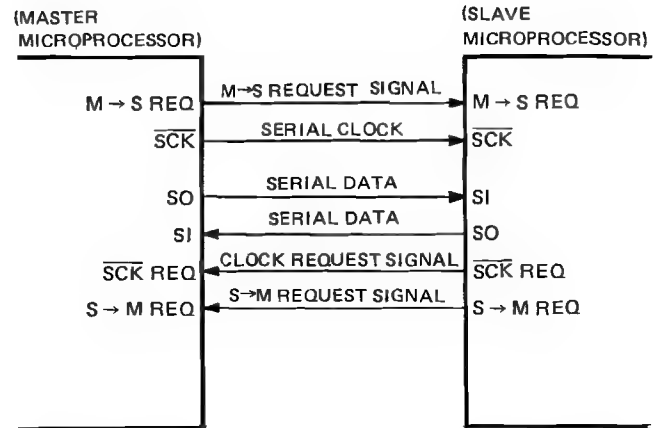
This microprocessor is used to control the cassette mechanism (D40-0341-05) based on the instructions from the Master microprocessor. In addition to the mechanism control, the Slave microprocessor also performs:

- Slide pocket control (ON/OFF using diode switch).
- Door shutter control (ON/OFF using diode switch).
- Control outputs for Dolby, dbx, reproduce equalizer time constant switching and reproduce amplifier switching (based on the data from the Master).

The Master microprocessor gives instructions to the Slave microprocessor by serial data transmission. The microprocessors are connected via six signal lines.

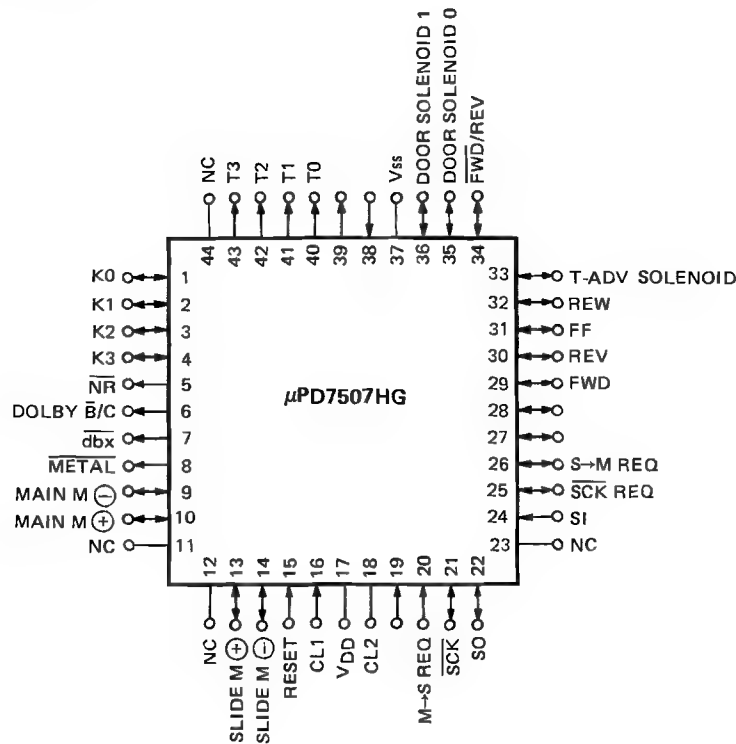
#### 2. Data Communications

For the data communications, refer to the description of the Master microprocessor.



#### 3. Terminal Description

##### 3-1. Terminal configuration diagram



## CIRCUIT DESCRIPTION

3-2. Terminal description table

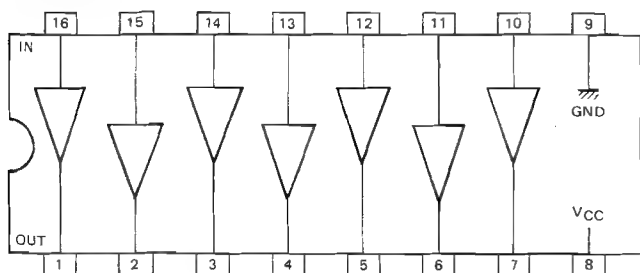
Pin No.	Symbol	Terminal Name	Description
1~4	K0~K3	Key return signal inputs	Input terminals for return signal from the Dynamic key matrix. Each terminal is connected to a 3.3k $\Omega$ pull-down resistor. Active "L".
5	NR	NR ON/OFF signal output	Dolby B or C ON/OFF control signal output. Active "L".
6	DOLBY B/C	Dolby B/C switching	Dolby B/C switching signal output. "H" for C, "L" for B.
7	dbx	dbx ON/OFF signal	dbx ON/OFF control signal. "L" for ON, "H" for OFF.
8	METAL	NORMAL/METAL switching signal	Output for switching the time constant of the tape reproduce equalizer. "H" for NORMAL, "L" for High position.
9	MAIN. M. $\ominus$	Mechanism main motor reverse rotation control	Controls the reverse rotation of the main motor of the mechanism. Active "H".
10	MAIN. M. $\oplus$	Mechanism main motor forward rotation control	Controls the forward rotation of the main motor of the mechanism. Active "H".
11,12	NC	NC	Not connected.
13	SLIDE M. $\oplus$	Slide pocket motor forward rotation control	Controls ON/OFF of the slide pocket motor rotation in the OPEN direction. Active "H".
14	SLIDE M. $\ominus$	Slide pocket motor reverse rotation control	Controls ON/OFF of the slide pocket motor rotation in the CLOSE direction. Active "H".
15	RESET	Reset input	Microprocessor resetting input. Active "H".
16	CL1	External clock input	Connection terminal for the X'tal system clock oscillator.
17	VDD	Power supply	Power supply input.
18	CL2	External clock	Connection terminal for the X'tal system clock oscillator.
19	—	—	Not connected.
20	M→S REQ	Master→Slave communication request input	Communication request input from the Master microprocessor. Active "H".
21	SCK	Serial clock	Serial clock input from the Master microprocessor.
22	SO	Serial data output	Serial data output terminal.
23	NC	NC	Not connected
24	SI	Serial data input	Serial data input terminal.
25	SCK REQ	Serial clock request	Serial clock request output to the Master microprocessor. Active "H".
26	S→M REQ	Slave→Master communication request output	Communication request output to the Master microprocessor. Active "H".
27,28	NC	NC	Not connected.
29	FWD	Assist motor FWD output	Controls the FWD-direction rotation of the assist motor used for the forward/reverse movement of the mechanism head. Active "H".
30	REV	Assist motor REV output	Controls the REV-direction rotation of the assist motor used for the forward/reverse movement of the mechanism head. Active "H".
31	FF	Assist motor FF output	Controls the FF-direction rotation of the assist motor of the FF/REW gear of the mechanism. Active "H".
32	REW	Assist motor REW output	Controls the REW-direction rotation of the assist motor of the FF/REW gear of the mechanism. Active "H".
33	T.ADV SOLENOID	T.ADV solenoid control output	Controls the T.ADV solenoid of the mechanism. Active "H".
34	FWD/REV	Equalizer amp switching control output	Controls the FWD/REV switching of the equalizer amp. "H" for REV, "L" for FWD.
35	DOOR SOLENOID 0	Door open solenoid drive	Drives the door shutter opening/closing solenoid.
36	DOOR SOLENOID 1	Door open solenoid drive	Holds the door shutter opening/closing solenoid.
37	GND	Ground	Grounding terminal.
38,39	—	—	Not connected.
40~43	T0~T3	Key scanning	Output terminals of 4X4 key matrix scanning signal. Active "L"
44	NC	NC	Not connected

## SEMICONDUCTOR DATA

### 1. Segment Driver

BA618F: X13-5730-11, IC11, IC12

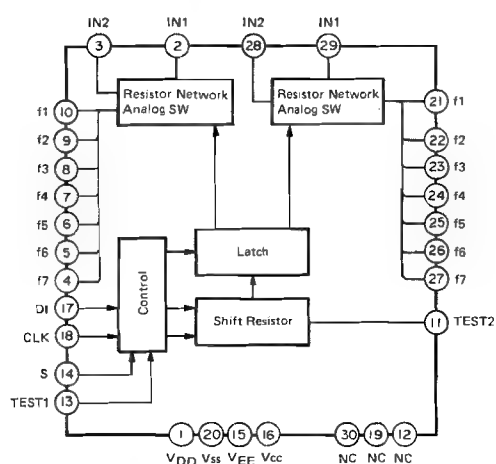
Block diagram



### 2. Electronic VR for Graphic Equalizer

LC7523M: X13-5730-11, IC2

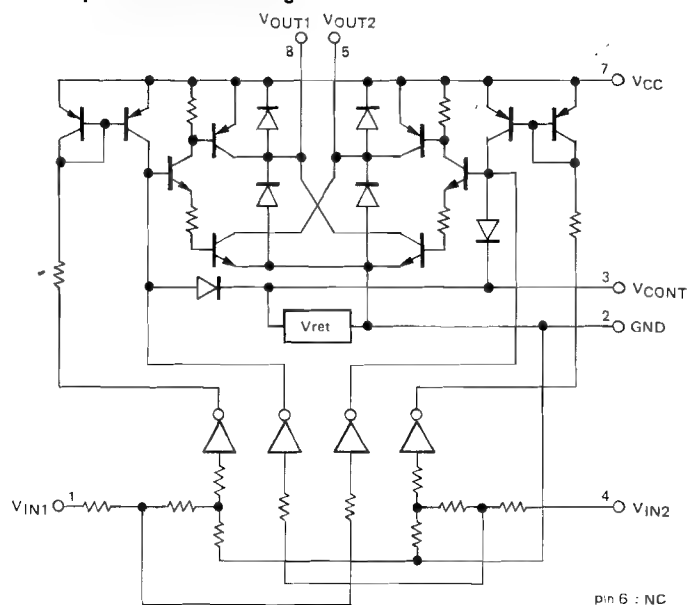
Block diagram



### 4. Pocket Motor Driver

LB1630: X25-3010-11, IC5

Equivalent circuit diagram

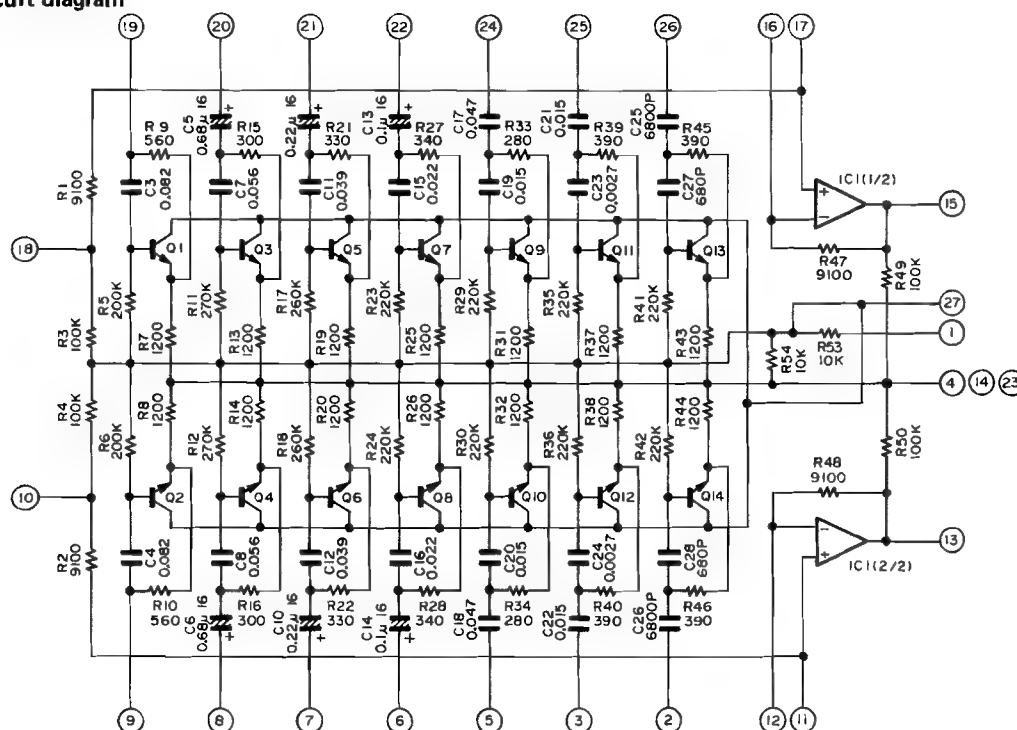


Truth value table

IN1 (1)	IN2 (4)	OUT1 (8)	OUT2 (5)	MOTOR
H	L	H	L	FORWARD ROTATION (OPEN)
L	H	L	H	REVERSE ROTATION (CLOSE)
H	H	OFF	OFF	STANDBY
L	L	OFF	OFF	STANDBY

### 3. Graphic Equalizer KC-840: X13-5730-11, IC1

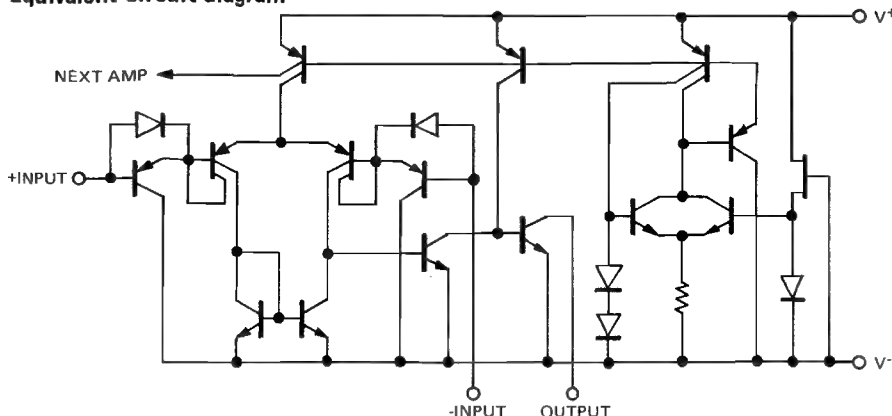
Equivalent circuit diagram



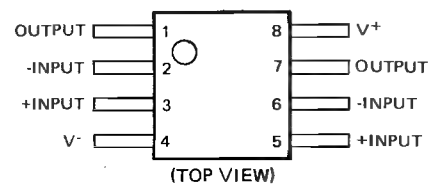
## SEMICONDUCTOR DATA

### 5. Comparator NJM2903M: X25-3010-11, IC12

#### Equivalent circuit diagram



#### Terminal configuration diagram



### 6. Tape Equalizer TA7705F: X25-3010-11, IC18

#### General

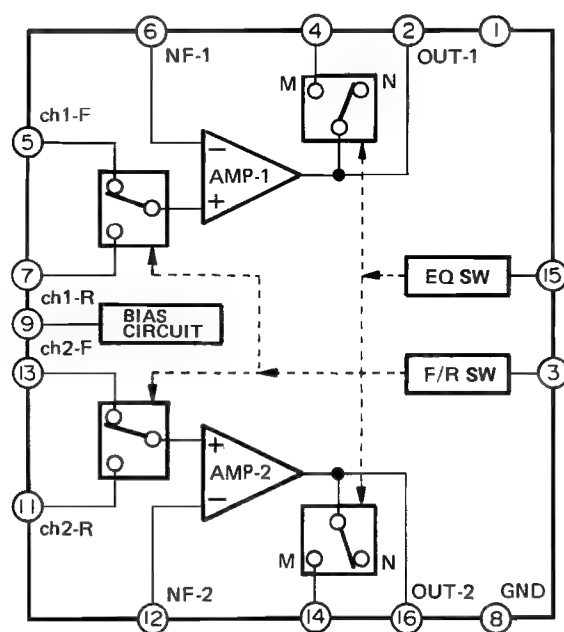
The TA7705F is a dual preamplifier exclusively designed for auto-reverse tape deck of car stereo.

The IC incorporates a 2-channel amplifier with an electronic switch for FWD/REV switching and an electronic switch for switching between two equalizing systems (e.g. Normal/Metal).

#### Features

- One single FWD/REV electronic switch allows to switch between the two channels.
- One single 2-system equalizer electronic switch allows to switch between two channels.
- High-gain dual preamplifier: GVO = 98dB (typical) ( $V_{CC} = 9V$ ,  $f = 1kHz$ )
- The device does not need any input coupling capacity circuit.
- Low noise:  $V_{NI} = 0.9\mu V_{rms}$  (typical) ( $R_g = 600\Omega$ ,  $BW = 20Hz$  to  $20kHz$ , NAB EQ)
- Operation power voltage:  $V_{CC(opr)} = 6$  to  $16V$

#### Block diagram



#### Electrical characteristics

Item	Symbol	Measuring Condition	Minimum	Typical	Maximum	Unit
Supply current in no-signal period	ICCQ (1)	$V_{IN} = 0$ , Normal EQ	—	5.0	—	mA
	ICCQ (2)	$V_{IN} = 0$ , Metal EQ	—	6.0	9.0	mA
Open-loop voltage gain	GVO	$C_f = 100\mu F$ , $R_f = 0$	—	98	—	dB
Max. output voltage	VOM	THD = 0.5%	1.5	2.0	—	Vrms
Total harmonic distortion	THD	$V_{OUT} = 0.5V_{rms}$	—	0.035	0.12	%
Noise voltage converted to input	VIN	Converted with the gain at $R_g = 620\Omega$ , $BW = 20 \sim 20kHz$ , $f = 1kHz$	—	0.9	1.7	$\mu V_{rms}$
Input resistance	RIN		—	500	—	k $\Omega$
Ripple elimination ratio	R.R	$f$ ripple = 100Hz, $V_{IN} = 1V_{rms}$	—	55	—	dB
Crosstalk	C.T	$V_{OUT} = 0dBm$	50	60	—	dB
Forward/reverse crosstalk	C.T (F/R)	$V_{OUT} = 0dBm$	60	70	—	dB

Unless otherwise specified,  $V_{CC} = 9V$ ,  $f = 1kHz$ ,  $R_L = 10k\Omega$ ,  $R_g = 600\Omega$ ,  $T_a = 25^\circ C$ , Normal EQ

## SEMICONDUCTOR DATA

### 7. Electronic VR TC9188F: X25-3010-11, IC6

#### General

The TC9188F is an electronic VR system incorporating the VRs required for the Volume, Balance, Fader, Bass, Treble and loudness controls on a monolithic chip.

- The VRs are selected and controlled as desired by applying the specified serial data.

Volume: 0 to -79dB (1dB/step)

Fader: 0 to -60dB (16 steps)

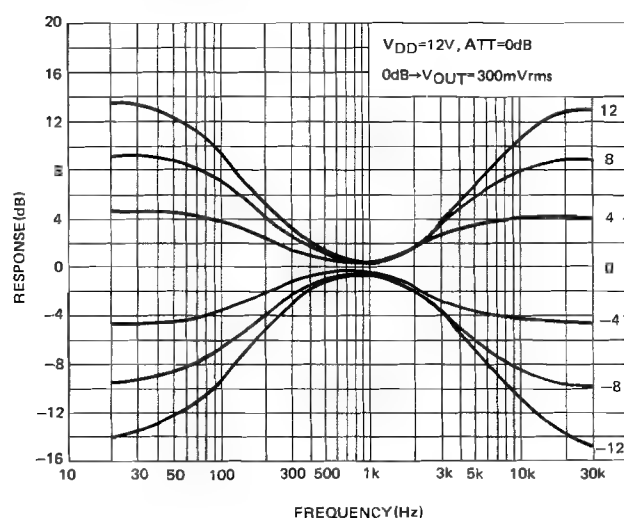
Tone: +12dB for both Bass and Treble (2dB/step)

Loudness:

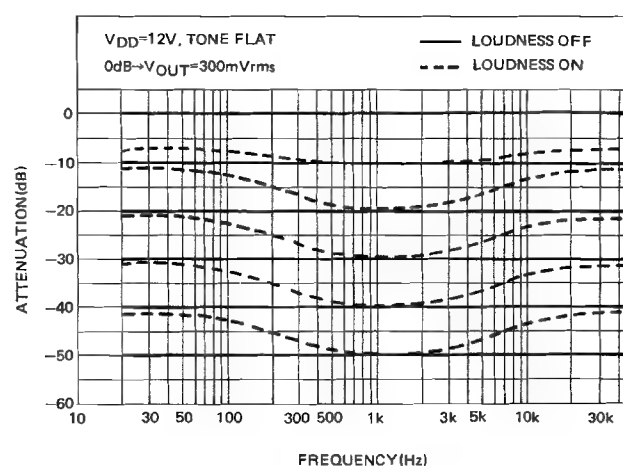
- The IC can be interfaced directly with the microprocessor because the logic level at the serial data input terminals is 0 to 5V.
- The C-MOS structure enables wide operation voltage range and low current consumption.

#### Reference diagrams

##### Tone control characteristic

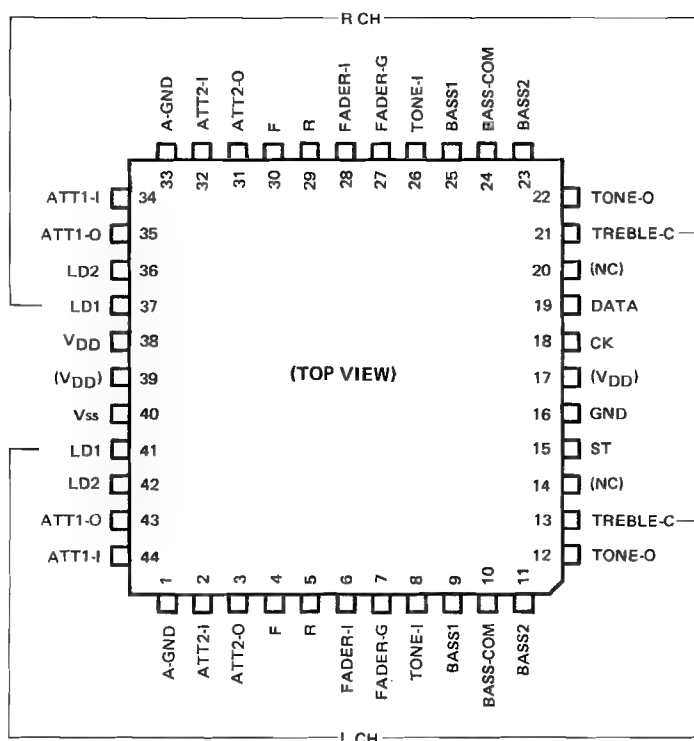


##### Loudness characteristic



#### Terminal description

##### Terminal configuration diagram

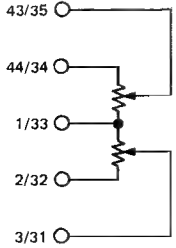
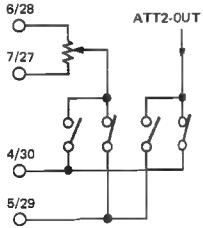
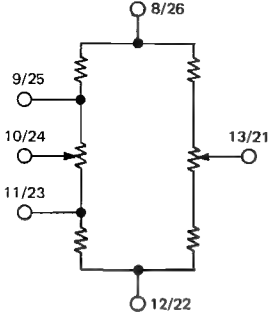
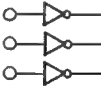
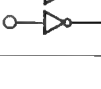




## SEMICONDUCTOR DATA

Terminal description table

Connect pins 17 and 39 to the VDD terminal (pin 38).

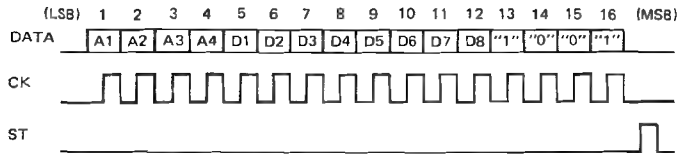
Pin No.	Symbol	Function Description	Note
1 (L) 33 (R)	A-GND	Analog grounding terminals.	
2 (L) 32 (R)	ATT2-IN	1dB step attenuator input terminals.	
3 (L) 31 (R)	ATT2-OUT	1dB step attenuator output terminals. The signals applied to ATT2-IN are attenuated by 0 to −9dB in ten 1-dB steps.	
43 (L) 35 (R)	ATT1-OUT	10dB step attenuator output terminals. The signals applied to ATT1-IN are attenuated by 0 to −70dB in eight 10-dB steps.	
44 (L) 34 (R)	ATT1-IN	10dB step attenuator input terminals.	
4 (L) 30 (R)	F	Fader control front output terminals.	
5 (L) 29 (R)	R	Fader control rear output terminals.	
6 (L) 28 (R)	FADER-IN	Fader control input terminals.	
7 (L) 27 (R)	FADER-GND	Fader control attenuator grounding terminals.	
8 (L) 26 (R)	TONE-IN	Tone control input terminals.	
9 (L) 25 (R)	BASS1	Bass tone control tap terminals.	
10 (L) 24 (R)	BASS-COM	Common terminals for Bass tone control VR.	
11 (L) 23 (R)	BASS2	Bass tone control tap terminals.	
12 (L) 22 (R)	TONE-OUT	Tone control output terminals.	
13 (L) 21 (R)	TREBLE-COM	Common terminals for Treble tone control VR.	
14 (L) 20 (R)	NC	Terminals to be opened or connected to GND.	
15	ST	Input terminal of strobe signal for switching to read control data. ST, and CK DATA are low-threshold inverter inputs.	
18	CK	Input terminal of clock signal for reading control data.	
19	DATA	Control data input terminal.	
41 (L) 37 (R)	LD1	Loudness network connection terminals.	
42 (L) 36 (R)	LD2		
16	GND		
38	VDD	Power connection terminals.	
40	VSS		

## SEMICONDUCTOR DATA

### Function description

#### • Data format

The TC9188F can be controlled as desired using data from the controller. The data consists of 16 bits.



#### 1) A1~A4 (bits 1~4)

Data bits 1 to 4 are used to select the L Volume, R Volume, Bass, Treble or Fader VR.

	A1	A2	A3	A4
Volume (L)	L	L	L	H
Volume (R)	H	L	L	H
Bass	L	H	L	H
Treble	H	H	L	H
Fader	L	L	H	H

#### 2) D1~D8 (bits 5~12)

Data bits 5 to 12 select the control step of the selected VR. The Bass and Treble controls uses only D1 to D4, and the Fader control uses only D1 to D4 and D8.

#### 2-a) Volume L/R

When the Volume L/R control is selected by data bits 1 to 4 (A1 to A4), data bits 5 to 12 (D1 to D8) define the volume attenuation data. D1 to D4 are for ATT2 with 1dB/step, and D5 to D8 are for ATT1 with 10dB/step.

D1	D2	D3	D4	ATT2
L	L	L	L	0dB
H	L	L	L	-1dB
L	H	L	L	-2dB
H	H	L	L	-3dB
L	L	H	L	-4dB
H	L	H	L	-5dB
L	H	H	L	-6dB
H	H	H	L	-7dB
L	L	L	H	-8dB
H	L	L	H	-9dB
L	H	L	H	-∞

D5	D6	D7	D8	ATT1
L	L	L	*	0dB
H	L	L	*	-10dB
L	H	L	*	-20dB
H	H	L	*	-30dB
L	L	H	*	-40dB
H	L	H	*	-50dB
L	H	H	*	-60dB
H	H	H	*	-70dB

\* Loudness

Note: Other data combinations than above may make the volume steps unstable.

#### 2-b) Loudness

Data D8 in the Volume L data is the loudness ON/OFF data. Loudness is ON when D8 is "H", and OFF when it is "L". Loudness is turned ON/OFF simultaneously for the L and R channels. Data D8 in the Volume R data has no function and can either be "L" or "H".

#### 2-c) Tone control (Bass, Treble)

When Bass/Treble is selected with data bits 1 to 4 (A1 to A4), data bits 5 to 8 (D1 to D4) defines the tone control data. The tone control data are set independently for Bass and Treble, but the L and R data cannot be set independently.

D1	D2	D3	D4	
L	H	H	L	+ 12dB
H	L	H	L	+ 10dB
L	L	H	L	+ 8dB
H	H	L	L	+ 6dB
L	H	L	L	+ 4dB
H	L	L	L	+ 2dB
L	L	L	L	0dB
H	H	H	H	- 2dB
L	H	H	H	- 4dB
H	L	H	H	- 6dB
L	L	H	H	- 8dB
H	H	L	H	- 10dB
L	H	L	H	- 12dB

Note: Other data combinations than above may make the volume steps unstable.

## SEMICONDUCTOR DATA

## 2-d) Fader

When Fader is selected with data bits 1 to 4 (A1 to A4), data bits 5 to 8 (D1 to D4) defines the fader VR data for attenuating the front or rear volume. Only one VR is used for L and R, and whether the attenuation is applied to the front or rear is selected by data bit 12 (D8). The fader VR attenuates the front volume when D8 is "H", and attenuates the rear volume when it is "L".

D1	D2	D3	D4	
L	L	L	L	0dB
H	L	L	L	- 2dB
L	H	L	L	- 4dB
H	H	L	L	- 6dB
L	L	H	L	- 8dB
H	L	H	L	- 10dB
L	H	H	L	- 12dB
H	H	H	L	- 14dB
L	L	L	H	- 16dB
H	L	L	H	- 18dB
L	H	L	H	- 20dB
H	H	L	H	- 26dB
L	L	H	H	- 35dB
H	L	H	H	- 45dB
L	H	H	H	- 60dB
H	H	H	H	- ∞dB

## 3) Code bits (bits 13~16)

Data bits 13 to 16 are the code bits for the TC9188F. Data having different code from the following is not accepted.

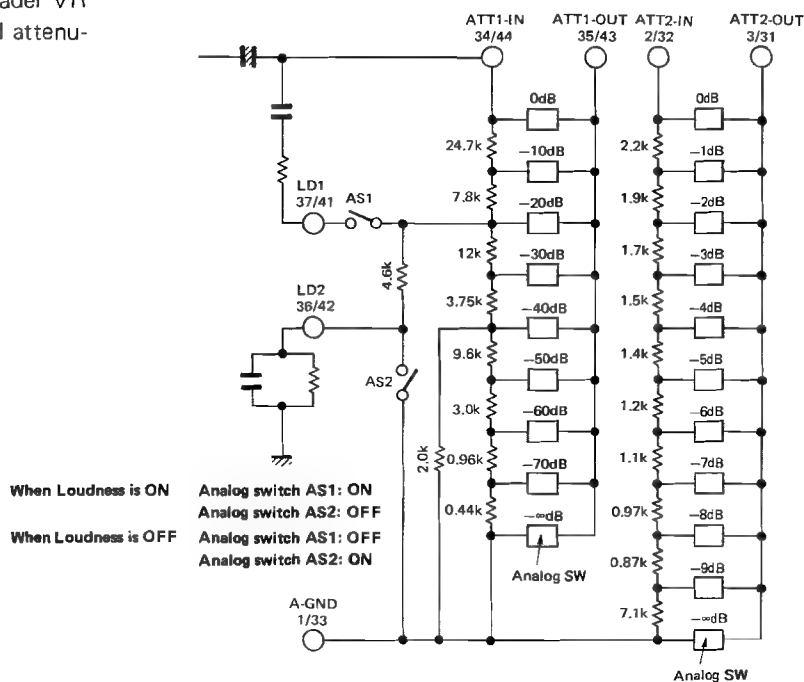
Data bit

15	14	15	16
H	L	L	H

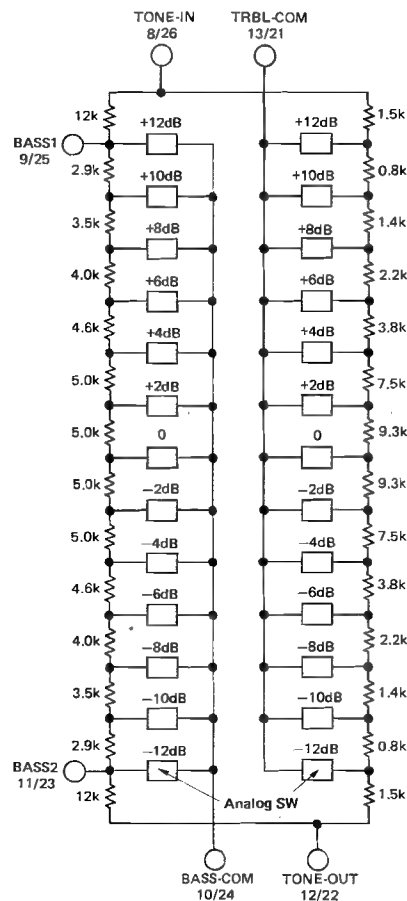
## • Explanation of each VR block

The VRs consist of diffused resistor arrays and analog switches.

## 1) Volume block, Loudness



## 2) Tone control (Bass, Treble) block

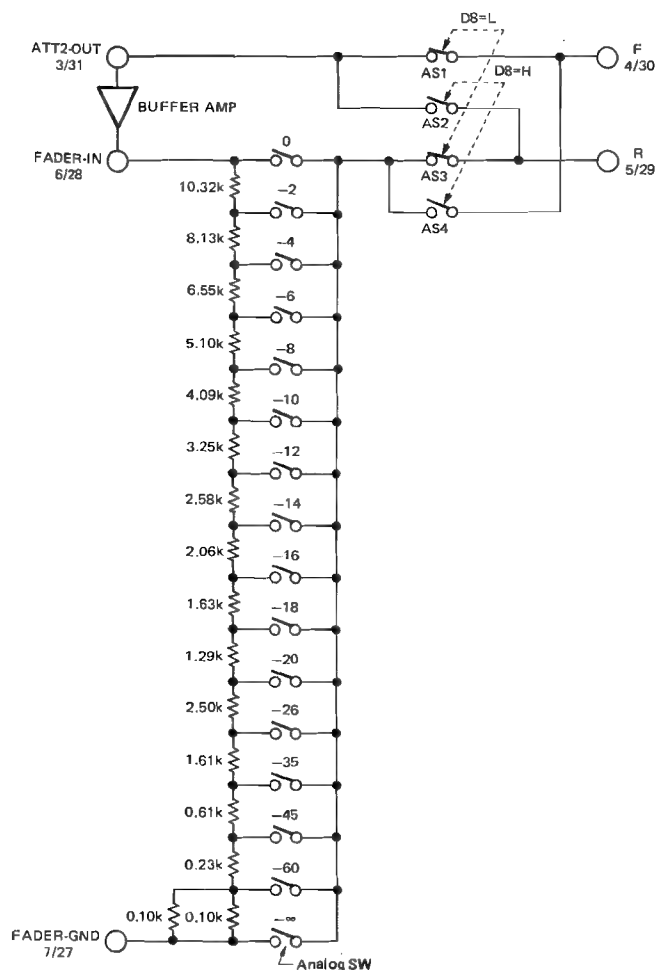


## SEMICONDUCTOR DATA

### 3) Fader block

When D8 in the Fader control data is "H", analog switches AS2 and AS4 turn ON so that the fader VR attenuates the front volume.

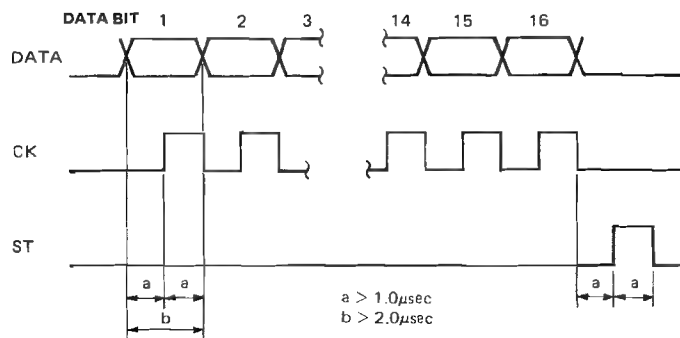
When D8 is "L", analog switches AS1 and AS3 turn ON so that the fader VR attenuates the rear volume.



D8	OUTPUT
"0"	F ← ATT2-OUT R ← FADER-VR
"1"	F ← FADER-VR R ← ATT2-OUT

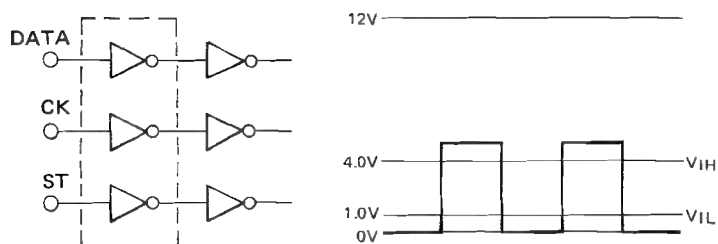
### • Timing of CK, DATA and ST inputs

CK, DATA and ST shall be input with the following timing.



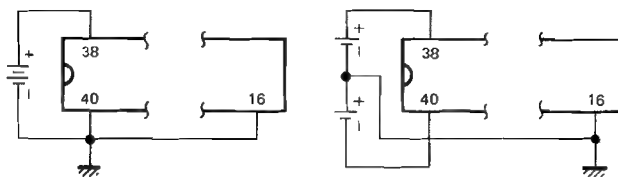
### • CK, DATA and ST inputs

The CK, DATA and ST inputs incorporate low-threshold inverters so that they can operate at the TTL logic level of 0 to 5V even when VDD = 12V is used.



### • Power supply circuitry

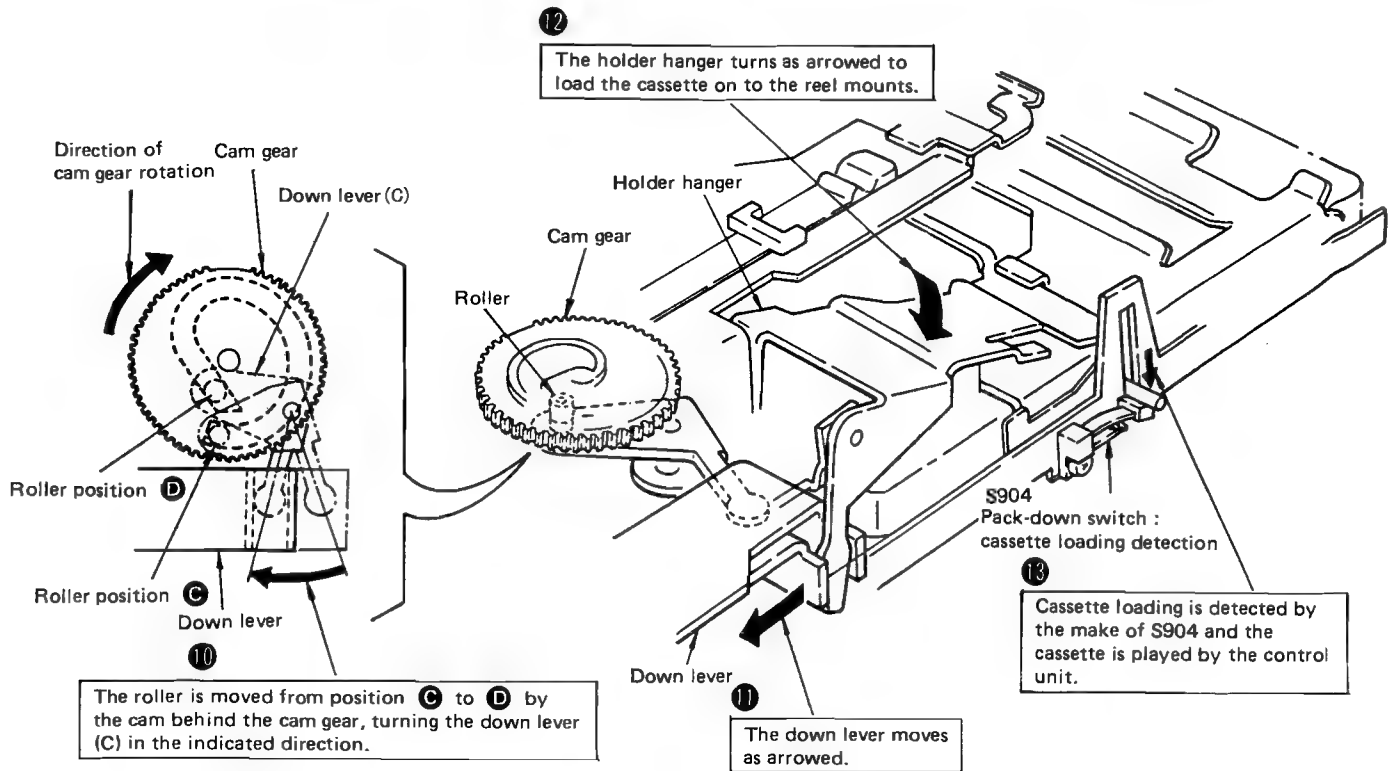
The TC9188F normally uses one power source, but can also be powered from two power sources. Even in this case, CK, DAT and ST can operate at the TTL logic level of 0 to 5V justlike when using one power source.



This function is described below.

29

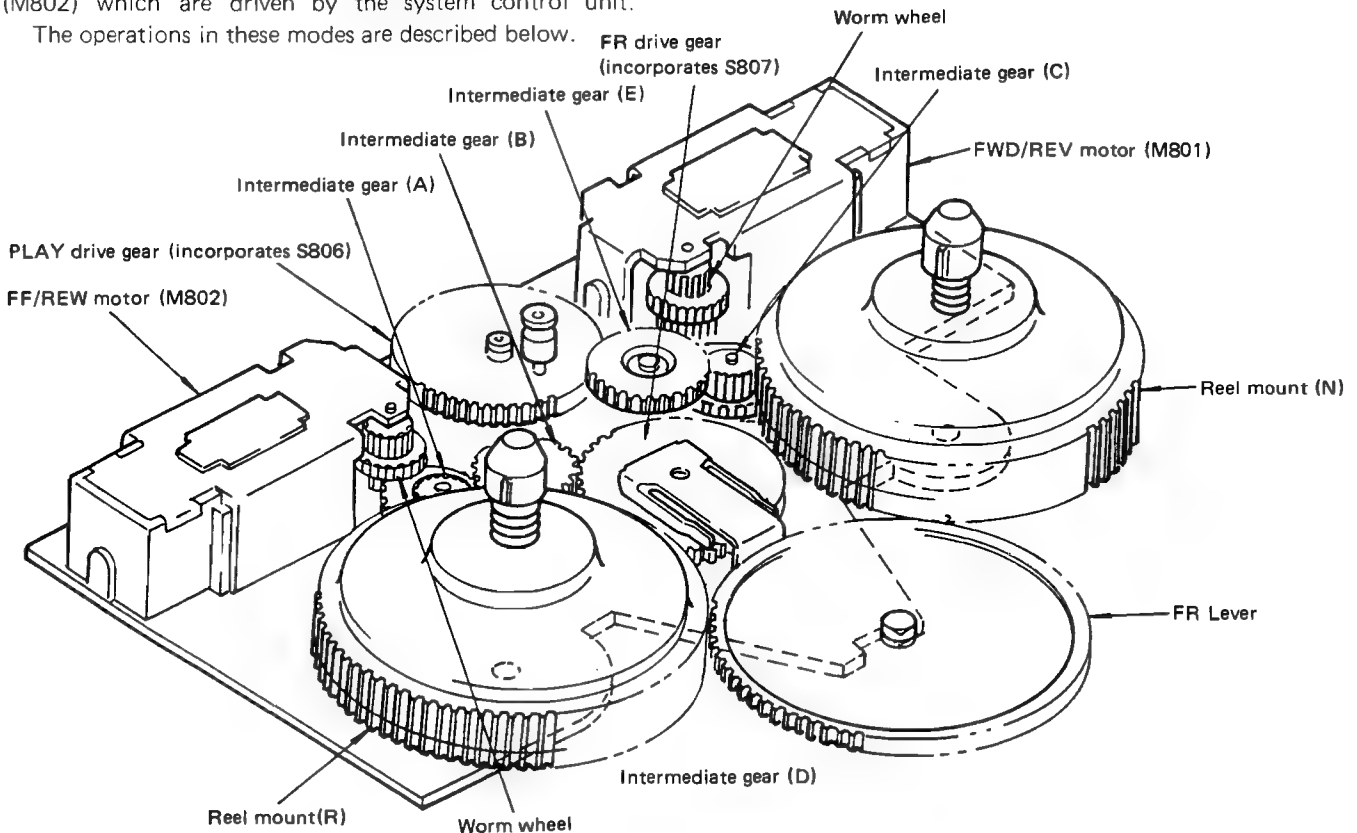
## MECHANISM OPERATION DESCRIPTION



### 2. Mode Operations

This unit accomplishes switching between modes through the FWD/REV motor (M801) and FF/REW motor (M802) which are driven by the system control unit.

The operations in these modes are described below.

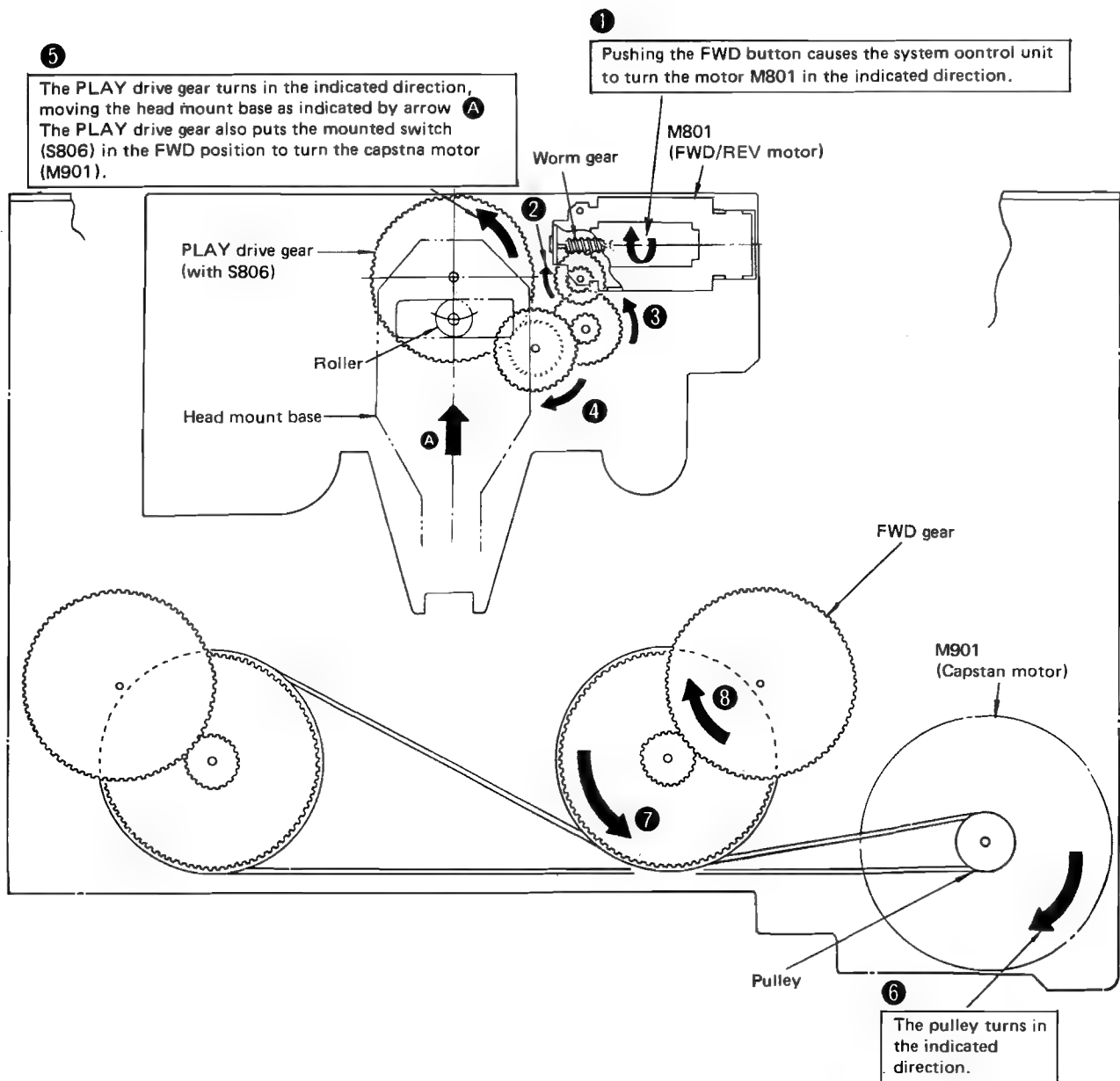


Control chassis components

## MECHANISM OPERATION DESCRIPTION

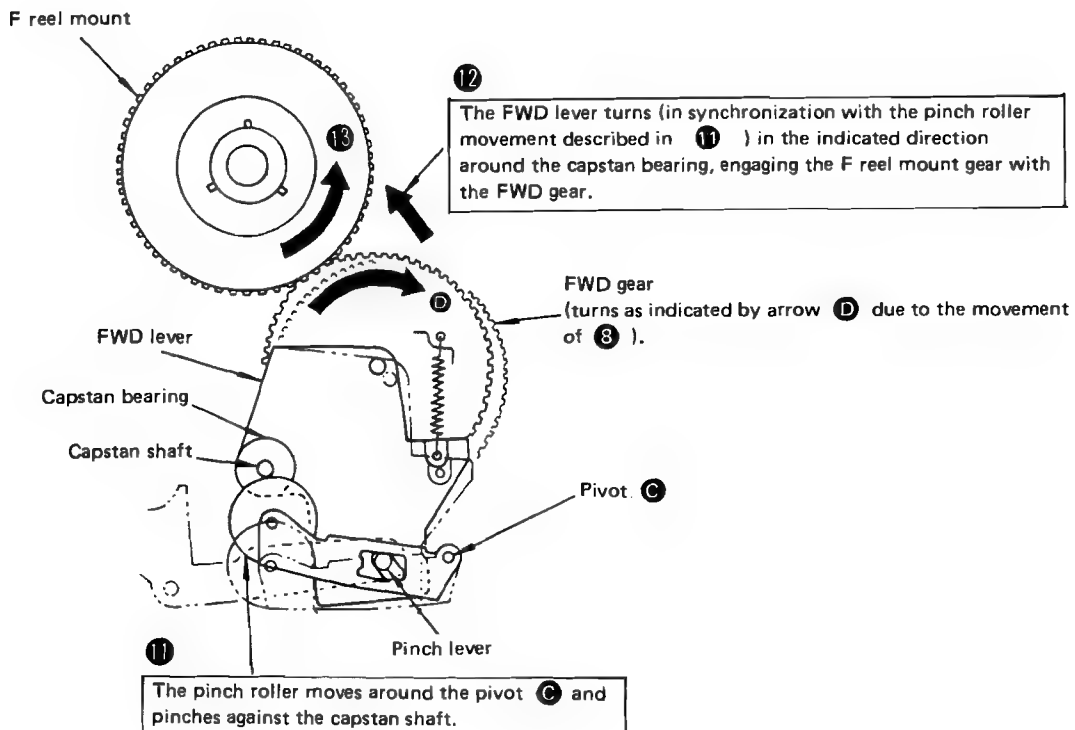
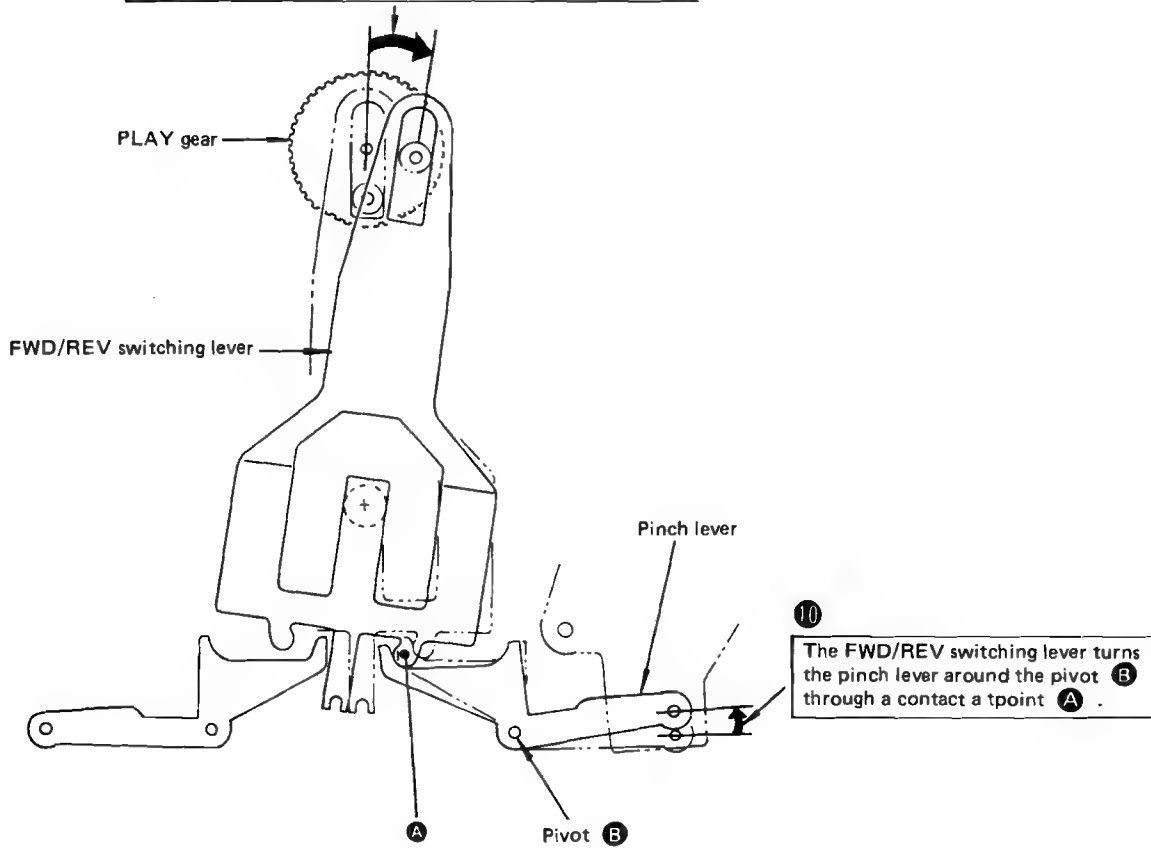
### 1. Forward (FWD) Mode

When this mode is entered, the mechanism operates in the sequence from ❶ to ❸ in the following illustrations.



## MECHANISM OPERATION DESCRIPTION

- 9 The PLAY drive gear turns the FWD/REV switching lever in the indicated direction through the movement described in 5 above.

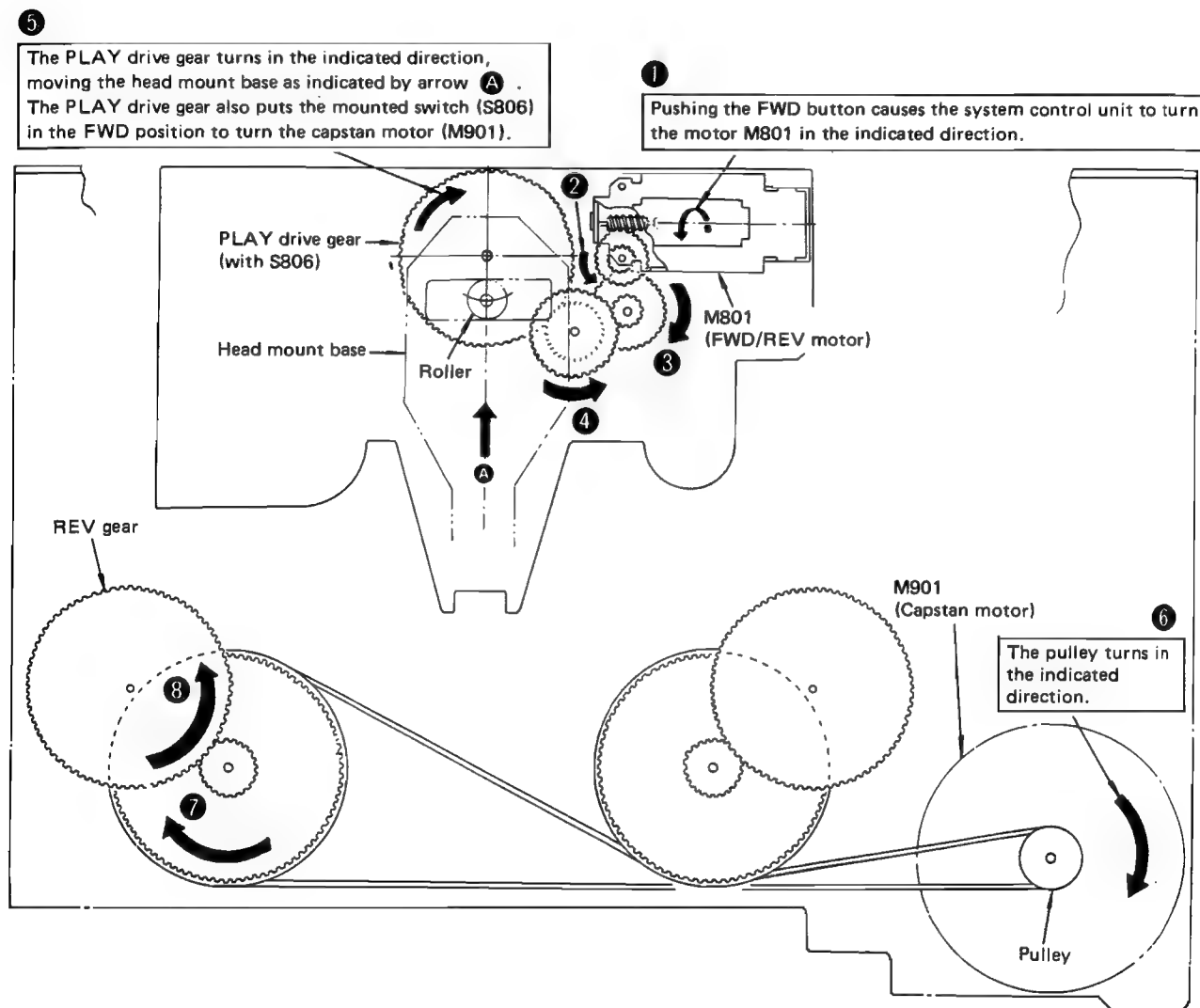




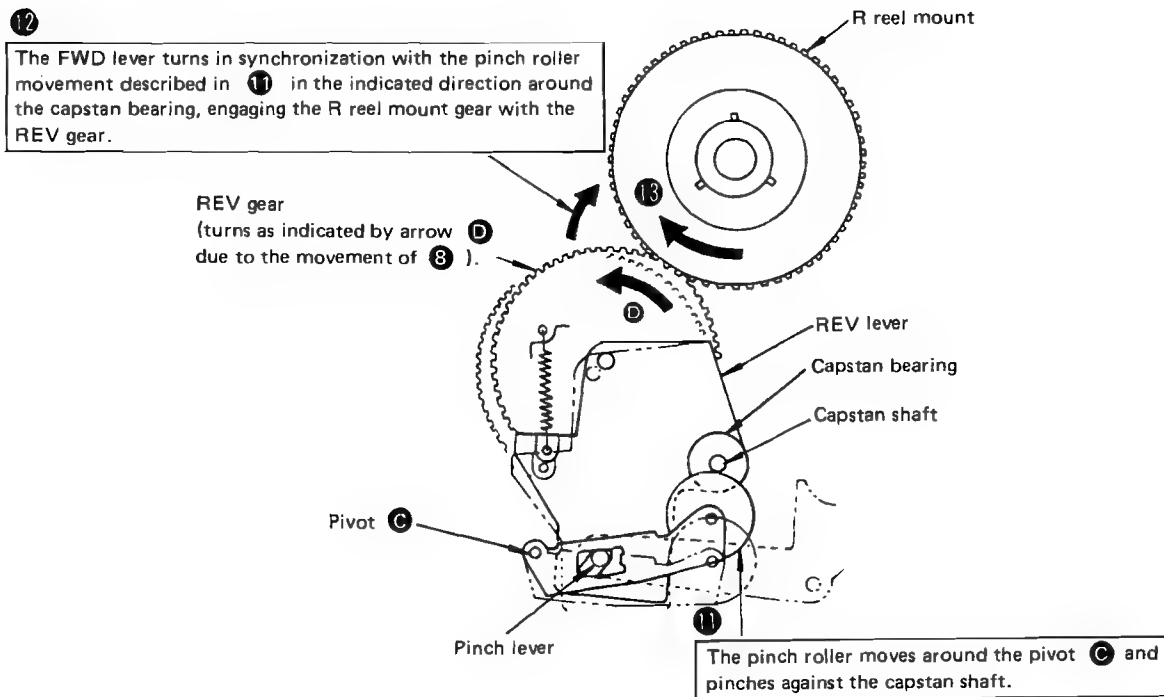
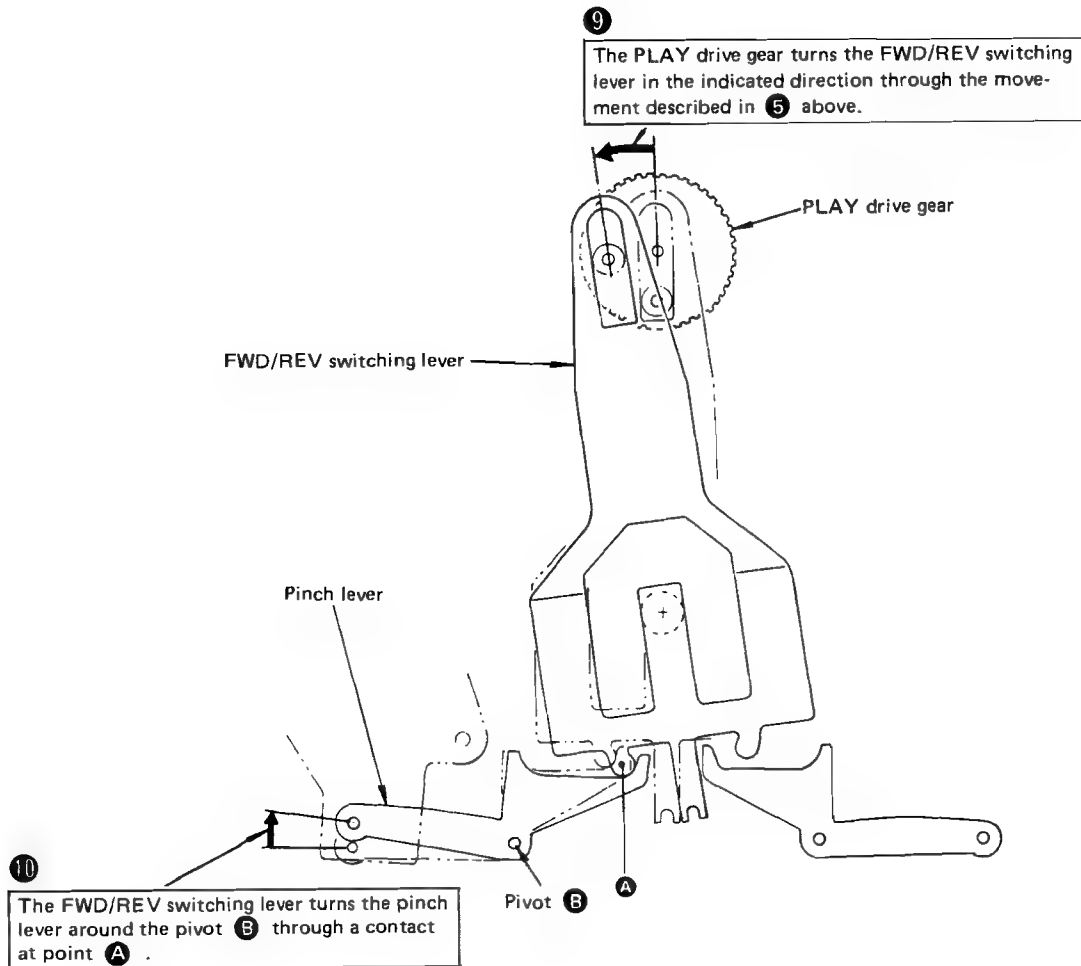
## MECHANISM OPERATION DESCRIPTION

### 2. Reverse (REV) Mode

When this mode is entered, the mechanism operates in the sequence from ❶ to ❸ in the following illustrations.



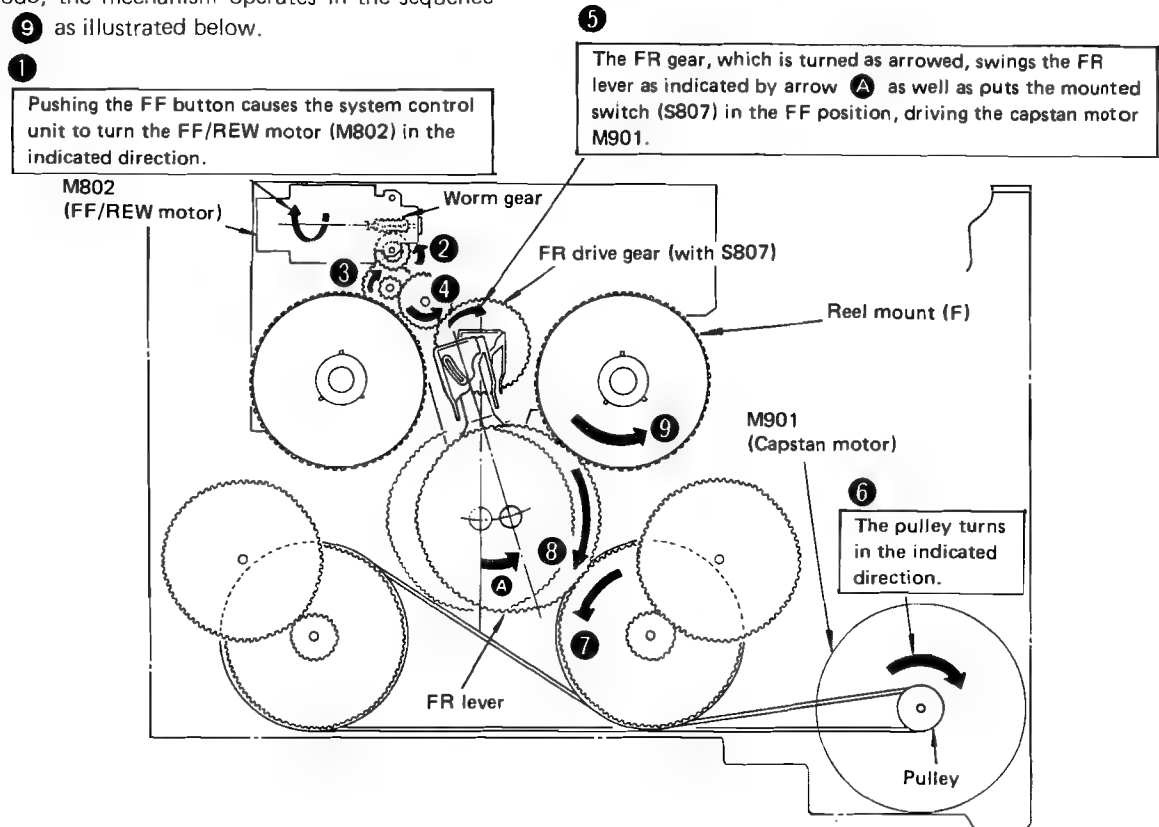
## MECHANISM OPERATION DESCRIPTION



## MECHANISM OPERATION DESCRIPTION

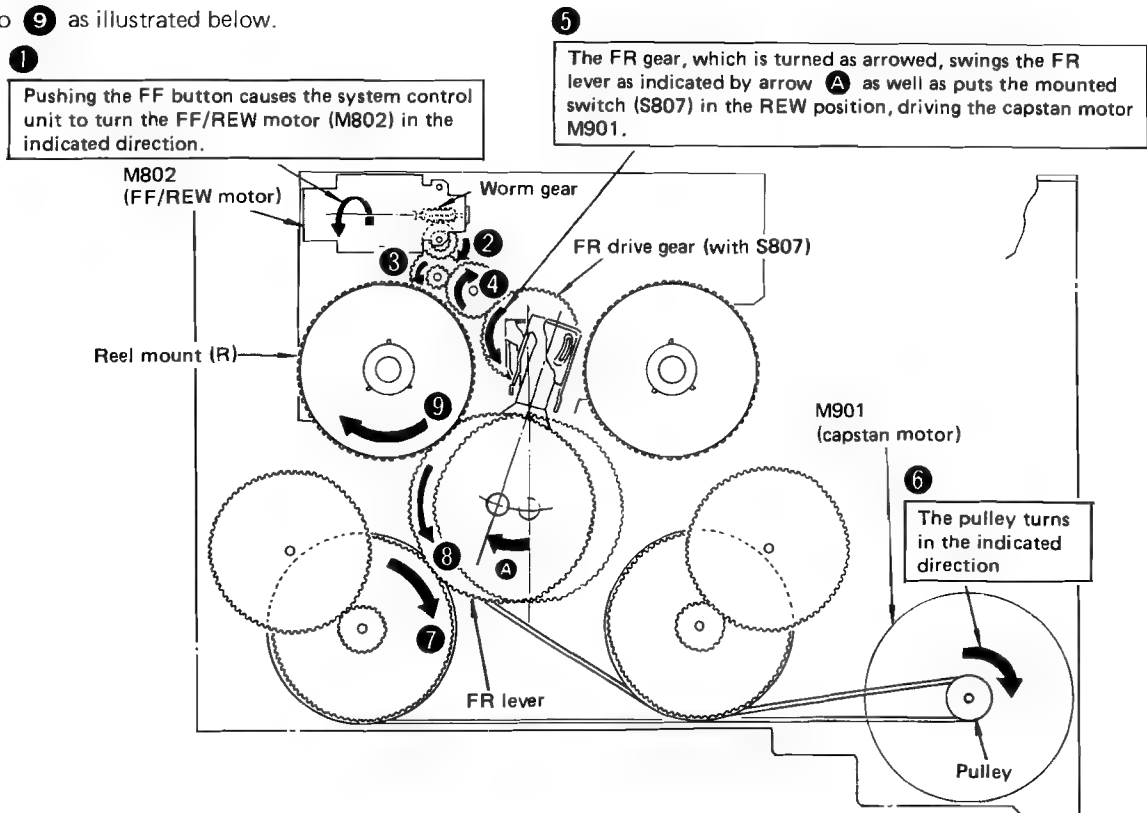
### 3. FF Mode (see page 36 for the description of T.ADV)

In this mode, the mechanism operates in the sequence from ① to ⑨ as illustrated below.



### 4. REW Mode (see page 36 for the description of T.ADV)

In this mode, the mechanism operates in the sequence from ① to ⑨ as illustrated below.



## MECHANISM OPERATION DESCRIPTION

### 5. Tape Advance (T.ADV) Mode

Selecting either FF or REW mode while in PLAY mode causes a plunger (PM801) to put the unit in T.ADV mode.

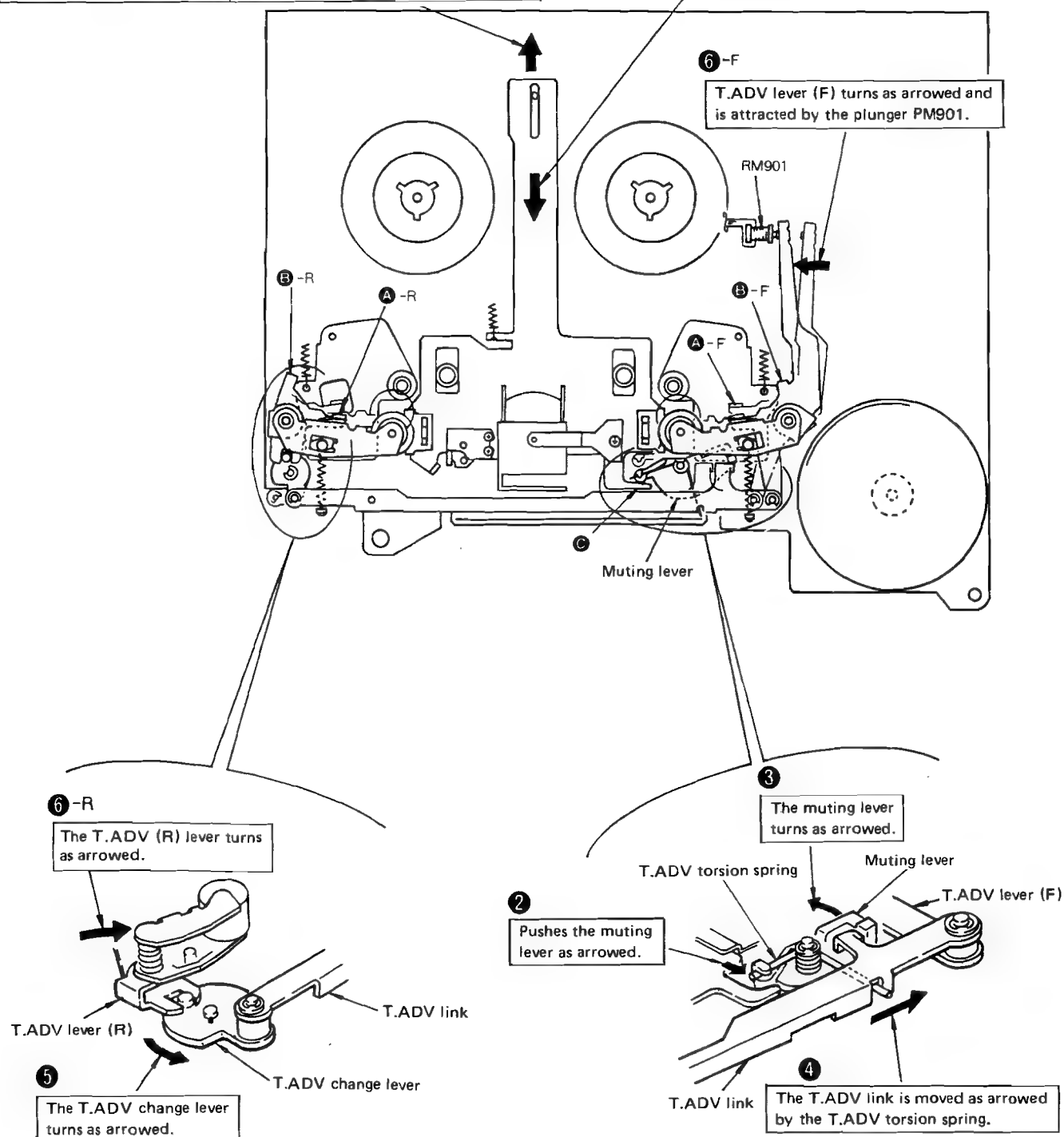
The sequence of events in this mode shift is described here.

⑦

The FWD/REW motor is driven to put the unit in PLAY mode again, and the head mount base is moved in the indicated direction until point **B** hits the muting lever so that the head is placed at the T.ADV position. Further, faces **A** -F and R respectively hold the pinch roller at the T.ADV position while faces **B** -F and R respectively hold the FWD and REV levers at the T.ADV position.

①

Pushing the FF or REW button while in PLAY mode turns the FWD/REV motor (M801) which pushes the head mount base via the PLAY gear roller.



## ADJUSTMENT

Set the controls and switches as follows.

BALANCE :Center position      TUNING :AUTO      DOLBY NR :OFF  
 FADER :Center position      T-ADV :OFF      ATT :OFF  
 EQ :Flat position      METAL :OFF      dbx :OFF

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	RECEIVER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
<b>FM SECTION</b> Selector: FM							
1	DISCRIMINATOR	(A) 98.1MHz 0 dev 60dB $\mu$ V(ANT input)	Connect a DC voltmeter to CN1. (X05-)	FM 98.1MHz	TI (X05-)	0V	(a)
2	SEPARATION	(B) 98.1MHz 1kHz, $\pm 8.25$ kHz dev Selector: L or R Pilot: $\pm 6.75$ kHz dev 60dB $\mu$ V(ANT input)	(D)	FM 98.1MHz	VR4 (X05-)	Minimum crosstalk. A compromise adjustment may be required if left-to-right and right-to-left separations are unequal.	
3	ANRC	(B) 98.1MHz 1kHz, $\pm 8.25$ kHz dev Selector: L or R Pilot: $\pm 6.75$ kHz dev 35dB $\mu$ V(ANT input)	(D)	FM 98.1MHz	VR1 (X05-)	Separation: 10dB	
4	STOP LEVEL	(A) 98.1MHz 1kHz, $\pm 75$ kHz dev 20dB $\mu$ V(ANT input)	TP1 (X05-)	FM 98.1MHz	VR2 (X05-)	TP1: 0V	
5	SOFT MUTE LEVEL	(A) 98.1MHz 1kHz, $\pm 75$ kHz dev 60dB $\mu$ V $\rightarrow$ No input	(D)	FM 98.1MHz	VR3 (X05-)	Output Noise level -25dB (When not add any signal to ANT terminal.)	
6	S-METER	(A) 98.1MHz 0 dev 45dB $\mu$ V(ANT input)	S-meter ind.	FM 98.1MHz	VR7 (X05-)	Position at which all S-meter indicators start to light.	
After the ANRC adjustment, perform the separation.							
<b>AM SECTION</b> Selector: AM							
<1>	STOP LEVEL	(C) 999kHz 400Hz, 30% mod 35dB $\mu$ V(ANT input)	TP1 (X05-)	AM 999kHz	VR5 (X05-)	TP1: 0V	
<2>	S-METER	(C) 999kHz 400Hz, 30% mod 74dB $\mu$ V(ANT input)	S-meter ind.	AM 999kHz	VR6 (X05-)	Position at which all S-meter indicators start to light.	
<b>CLOCK SECTION</b> Power: OFF							
-1-	CLOCK	-	Connect a frequency counter to TP1. (X25-)	-	TC1 (X25-)	1,048.575kHz $\pm 25$ Hz	(b)
<b>CASSETTE DECK SECTION</b>							
[1]	PLAYBACK LEVEL	MTT-150	Connect an AC voltmeter to TP1. (X14-)	TAPE PLAY	VR1(L) VR2(R) (X14-)	245mV	(c)
[2]	AZIMUTH	MTT-114 10kHz, -10dB	(D)	TAPE PLAY	Head Azimuth Screw (D40-0341-05)	Adjust so that the output level of the forward and reverse left and right channels are all maximum and identical.	(d)
[3]	dbx	MTT-150	Connect a DC voltmeter to TP2. (X14-)	TAPE PLAY dbx: ON	VR3 (X14-)	15mV	(e)
<b>AMPLIFIER SECTION</b>							
[1]	AUTO VOLUME	-	Connect an oscilloscope to TP2. (X25-)	-	VR1 (X25-)	-500mV	(f)

## REGLAGE

Régler les contrôles et les boutons comme suit.

BALANCE : Position centre      TUNING : AUTO      DOLBY NR : OFF  
 FADER : Position centre      T ADV : OFF      ATT : OFF  
 EQ : Position d'uniformité      METAL : OFF      dbx : OFF

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER (AMPLI-TUNER)	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF      Selecteur: FM							
1	DISCRIMINATEUR	(A) 98,1MHz 0dév 60dBμV(Entrée ANT)	Connecter un voltmètre CC entre à CN1. (X05-)	FM 98,1MHz	T1 (X05-)	0V	(a)
2	SEPARATION	(B) 98,1MHz 1kHz.±68,25kHz dév Selecteur: L ou R Pilote:±6,75kHz dév 60dBμV(Entrée ANT)	(D)	FM 98,1MHz	VR4 (X05-)	Diaphone minimale. Un compromis de réglage peut être nécessaire si les séparations de gauche à droite et de droite à gauche sont inégales.	
3	ANRC	(B) 98,1MHz 1kHz.±68,25kHz dév Selecteur: L ou R Pilote:±6,75kHz dév 35dBμV(Entrée ANT)	(D)	FM 98,1MHz	VR1 (X05-)	Séparation:10dB	
4	NIVEAU D'ARRET	(A) 98,1MHz 1kHz.±75kHz dév 20dBμV(Entrée ANT)	TP1 (X05-)	FM 98,1MHz	VR2 (X05-)	TP1:0V	
5	NIVEAU DE SOFT MUTE	(A) 98,1MHz 1kHz.±75kHz dév 60dBμV→Entrée No	(D)	FM 98,1MHz	VR3 (X05-)	Bruit de niveau de sortie -25dB (Sous non correspondance d'antenne.)	
6	COMPTEUR DE SIGNAL	(A) 98,1MHz 0dév 45dBμV(Entrée ANT)	Les indicateurs de compteur de signal.	FM 98,1MHz	VR7 (X05-)	Position à laquelle tous les indicateurs de compteur de signal commencent à s'allumer.	
Après le réglage ANRC, effectuer à nouveau le réglage de séparation.							
SECTION MA      Selecteur:AM							
<1>	NIVEAU D'ARRET	(C) 999kHz 400Hz. 30% mod 35dBμV(Entrée ANT)	TP1 (X05-)	AM 999kHz	VR5 (X05-)	TP1: 0V	
<2>	COMPTEUR DE SIGNAL	(C) 999kHz 400Hz. 30% mod 74dBμV(Entrée ANT)	Les indicateurs de compteur de signal.	AM 999kHz	VR6 (X05-)	Position à laquelle tous les indicateurs de compteur de signal commencent à s'allumer.	
SECTION HORLOGE      Power:OFF							
-1-	HORLOGE	-	Connecteur un compteur de fréquence à TP1. (X25-)	-	TC1 (X25-)	1,048,575kHz±25Hz	(b)
SECTION DU MAGNETPHONE							
[1]	NIVEAU DE LECTURE	MTT-150	Connecteur un voltmètre CA au TP1. (X14-)	Lecture de bande	VR1(G) VR2(D) (X14-)	245mV	(c)
[2]	AZIMUTH	MTT-144 10kHz, -10dB	(D)	Lecture de bande	Vis d'azimut de tête (D40-0341-05)	Régler en sorte que les niveaux de sortie des canaux de l'avance de gauche et de droite et des canaux marche arrière de gauche et de droite soient tous au maximum et identiques.	(d)
[3]	dbx	MTT-150	Connecteur un voltmètre CC au TP2. (X14-)	Lecture de bande dbx:ON	VR3 (X14-)	15mV	(e)
SECTION DU AMPLIFICATEUR							
<1>	VOLUME AUTOMATIQUE	-	Connecteur un oscilloscope à TP2. (X25-)	-	VR1 (X25-)	-500mV	(f)

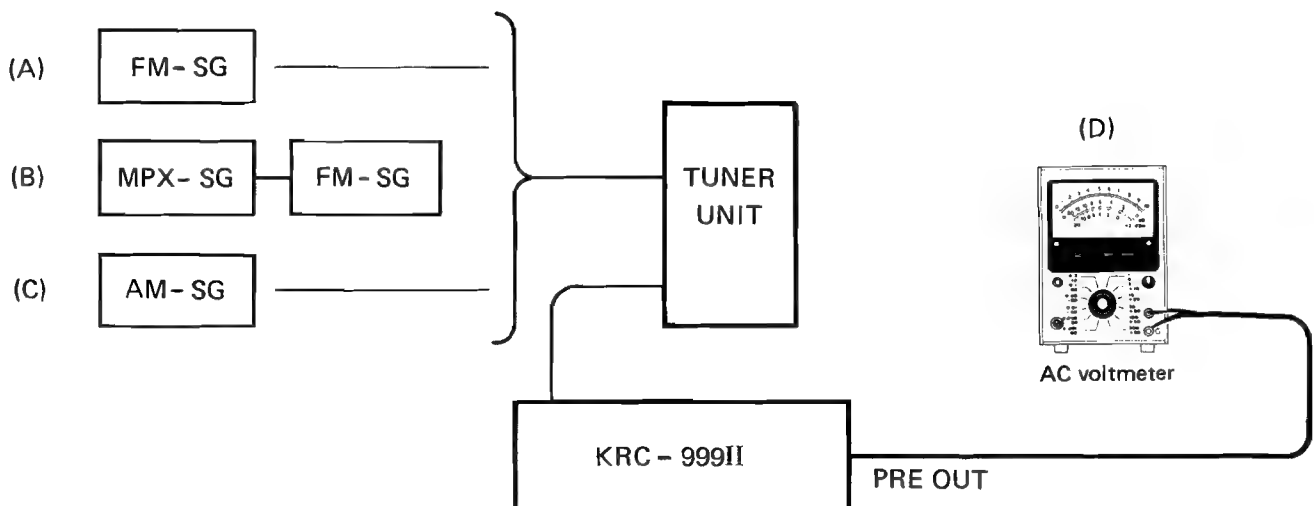
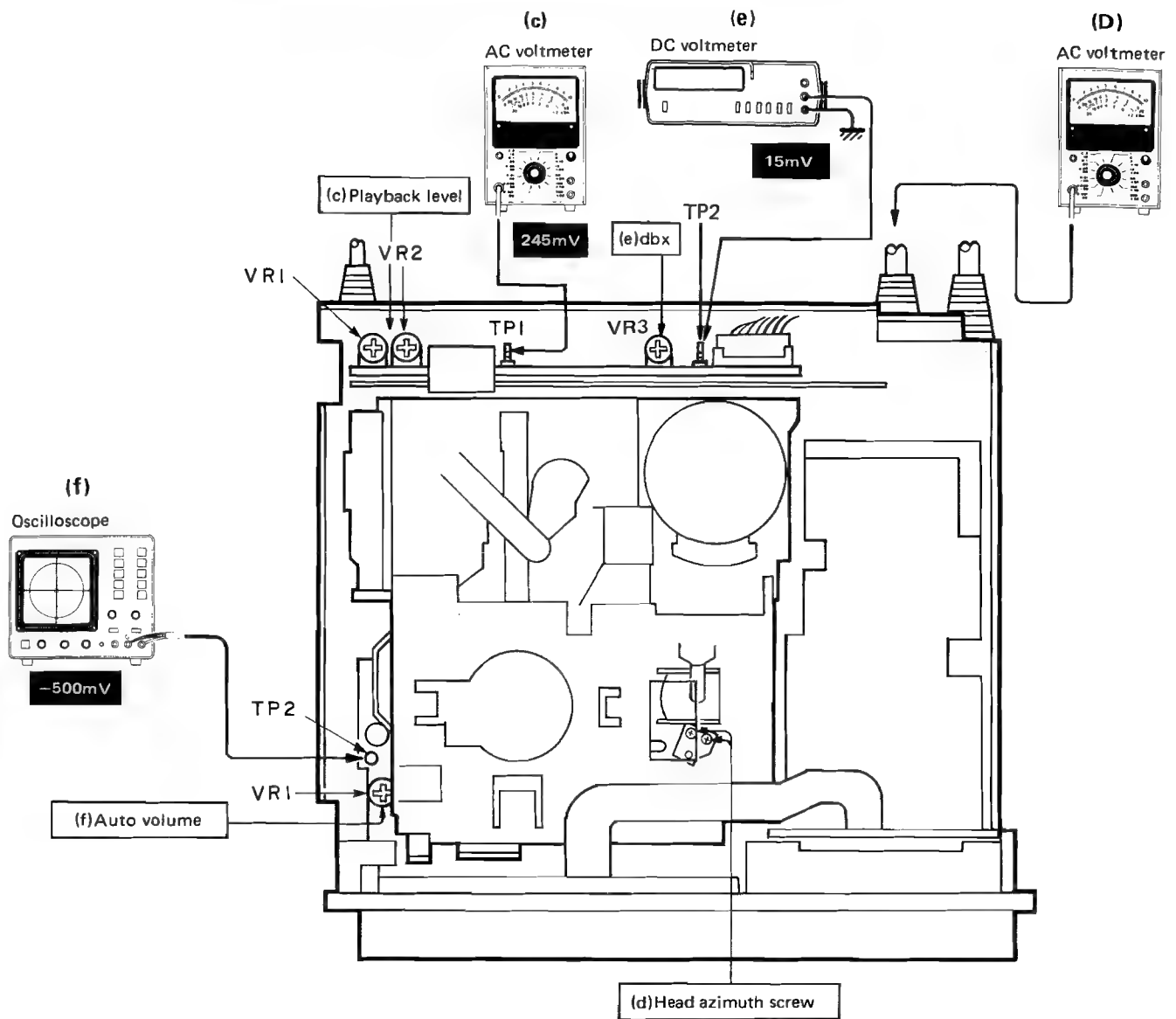
## ABGLEICH

Die Regler und Knöpfe wie folgt einstellen.

BALANCE :Mittelage TUNING :OFF DOLBY NR :OFF  
 FADER :Mittelage T-ADV :OFF ATT :OFF  
 EQ :Linear-Position METAL :OFF dbx :OFF

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER(RECEIVER)-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-ABTEILUNG Selector:FM							
1	DISKRIMINATOR	(A) 98,1MHz 0 Hub 60dB $\mu$ V (ANT-Eingang)	Einen Gleichspannungsmesser zwischen zu CN1 anschließen. (X05-)	FM 98,1MHz	T1 (X05-)	0V	(a)
2	STEREO KANAL TRENNUNG	(B) 98,1MHz 1kHz $\pm$ 68,25kHz Hub Wähler: L oder R Pilot: $\pm$ 6,75kHz Hub 60dB $\mu$ V (ANT-Eingang)	(D)	FM 98,1MHz	VR4 (X05-)	Minimales Übersprechen. Einen Ausgleichregelung kann notwendig sein, falls links zu rechts und rechts zu links Trennungen ungleich sind.	
3	ANRC	(B) 98,1MHz 1kHz $\pm$ 68,25kHz Hub Wähler: L oder R Pilot: $\pm$ 6,75kHz Hub 35dB $\mu$ V (ANT-Eingang)	(D)	FM 98,1MHz	VR1 (X05-)	Trennung:10dB	
4	HALT PEGEL	(A) 98,1MHz 1kHz $\pm$ 75kHz Hub 20dB $\mu$ V (ANT-Eingang)	TP1 (X05-)	FM 98,1MHz	VR2 (X05-)	TP1:0V	
5	SOFT MUTE PEGEL	(A) 98,1MHz 1kHz $\pm$ 75kHz Hub 60dB $\mu$ V $\rightarrow$ No Eingang	(D)	FM 98,1MHz	VR3 (X05-)	Ausgang Geräusch Pegel -25dB (Wenn Antenna stecker Nicht anschließen.)	
6	SIGNALMETER	(A) 98,1MHz 0 Hub 45dB $\mu$ V (ANT-Eingang)	Signalmeter-Anzeige	FM 98,1MHz	VR7 (X05-)	Position, an der alle Signalmeter-Anzeige zu leuchten anfangen.	
Nach der ANRC-Einstellung die Separations-Einstellung(Stereo Kanal Trennung) erneut durchführen.							
MW-ABTEILUNG Selector:AM							
<1>	HALT PEGEL	(C) 999kHz 400Hz, 30% mod 35dB $\mu$ V (ANT-Eingang)	TP1 (X05-)	MW 999kHz	VR5 (X05-)	TP1:0V	
<2>	SIGNALMETER	(C) 999kHz 400Hz, 30% mod 74dB $\mu$ V (ANT-Eingang)	Signalmeter-Anzeige	MW 999kHz	VR6 (X05-)	Position, an der alle Signalmeter-Anzeige zu leuchten anfangen.	
TAKT-ABTEILUNG Power:OFF							
-1-	TAKT	-	Einen Frequenz-zähler zu TP1 anschließen. (X25-)	-	TC1 (X25-)	1.048.575kHz $\pm$ 25Hz	(b)
CASSETTEN-DECK-ABTEILUNG							
[1]	WIEDERGABE PEGEL	MTT-150	Einen Wechselspannungsmesser zu TP1 anschließen. (X14-)	Bandwiedergabe	VR1(L) VR2(R) (X14-)	245mV	(c)
[2]	AZIMUTH	MTT-144 10kHz, -10dB	(D)	Bandwiedergabe	Kopfazimutschraube (D40-0341-05)	So einstellen, daß die Ausgangspegel der linken und rechten Kanäle bei Rücklauf maximal und übereinstimmend sind.	(d)
[3]	dbx	MTT-150	Einen Gleichspannungsmesser zu TP2 anschließen. (X14-)	Bandwiedergabe dbx:ON	VR3 (X14-)	15mV	(e)
VERSTÄRKER-ABTEILUNG							
(1)	AUTOMATIK-LAUTSTÄRKE	-	Einen Oszilloskop zu TP2 anschließen. (X25-)	-	VR1 (X25-)	-500mV	(f)

## ADJUSTMENT/REGLAGE/ABGLEICH

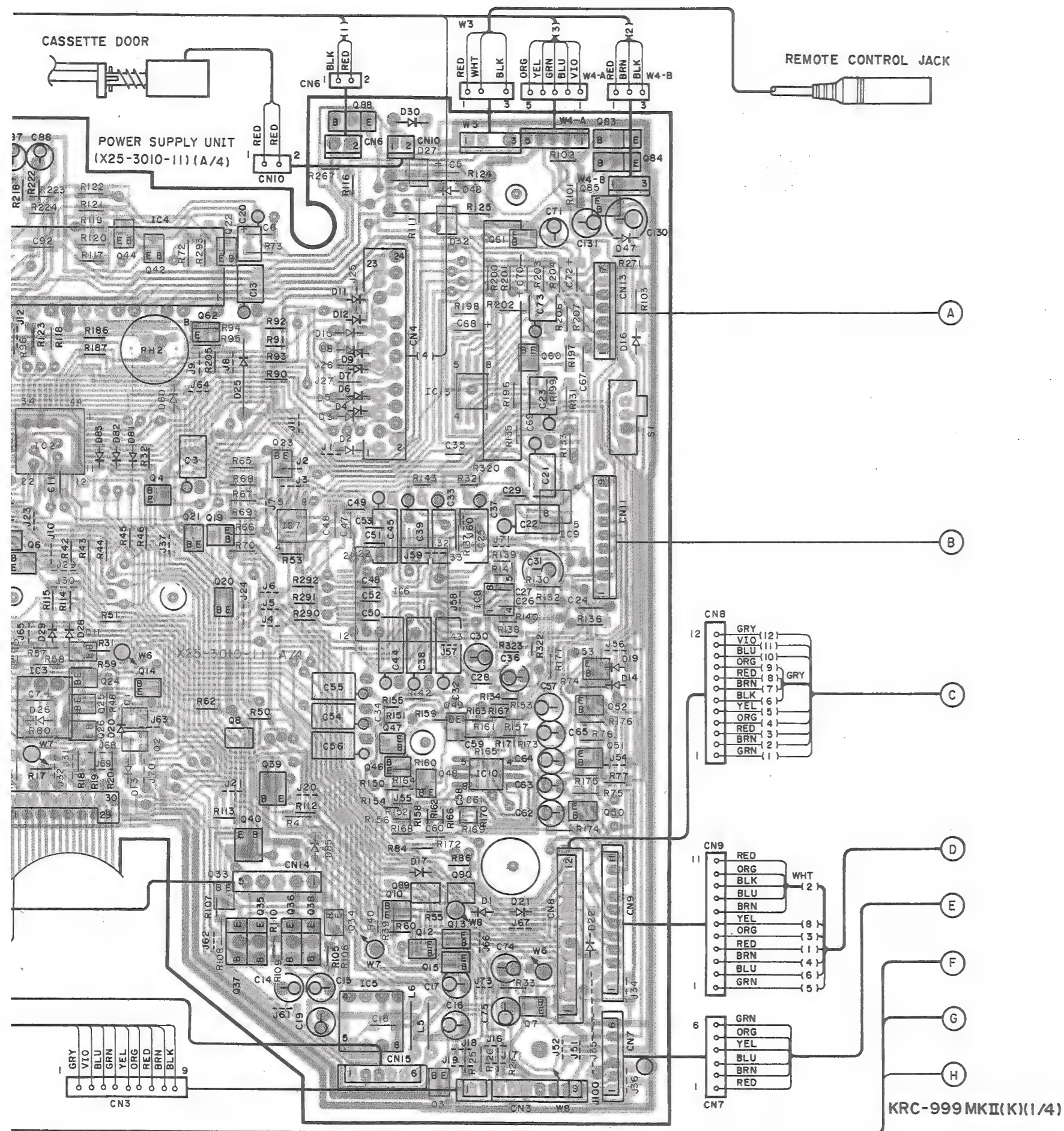








# D (COMPONENT SIDE VIEW)



(X25-3010-11)

IC1	1 ~ 3	0V
	7	4.76V
	10	0V
	11	4.77V
	12	4.69V
	13	4.75V
	26	0V
	29	0V
	30	4.69V
	31	4.70V
	32	0.50V
	33	0.26V
	34	0V
	35	5.39V
	36	0V
	37	4.78V
	39	4.79V
	40 ~ 42	0V
	43	4.79V
	44 ~ 53	0V
	54, 55	4.79V
	56	2.07V
	58	4.79V
	59 ~ 61	0V
	62	4.77V
	63	0V

IC2	4	4.91V
	5	4.76V
	6	0V
	7	4.76V
	8	0V
	9	4.76V
	10	0V
	11	4.75V
	13 ~ 15	0V
	17	4.79V
	19, 20	0V
	21	4.79V
	22	0V
	24 ~ 26	0V
	27	4.76V
	29 ~ 37	0V
	43	4.75V

IC3	I	4.76V
	O	4.76V
	GND	0V

IC4	1	4.25V
	3	2.48V
	4 ~ 7	0V
	8	5.00V
	9 ~ 10	0V
	11	5.45V
	12 ~ 16	0V

IC5	1 ~ 4	0V
	5	2.56V
	6	0V
	7	5.48V
	8	2.55V

IC6	1	4.55V
	3, 4	4.54V
	5, 6	4.53V
	7 ~ 9	4.55V
	10	4.56V
	11 ~ 13	4.55V
	14 ~ 16	0V
	17	9.09V
	18 ~ 20	0V
	21 ~ 23	4.55V
	24	4.56V
	25, 26	4.55V
	27	4.56V
	28, 29	4.53V
	30 ~ 32	4.55V
	33	4.56V
	34	4.54V
	35	4.56V
	36, 37	4.55V
	38, 39	9.09V
	40	0V
	41	4.56V
	42	4.55V
	43	4.56V
	44	4.54V

IC7	1 ~ 3	4.56V
	4	0V
	5 ~ 7	4.56V

IC8, 9	1, 2	4.60V
	3	4.50V
	4	0V
	5	4.50V
	6, 7	4.60V

IC10	1	4.61V
	2	4.60V
	3	4.51V
	4	0V
	5	4.52V
	6	4.57V
	7	4.60V

IC12	2	2.30V
	4	0V
	5	2.40V
	8	5.46V

IC13	1	4.62V
	2	4.85V
	3	4.50V
	4	0V
	5	4.60V
	6	4.62V
	7	5.00V
	8	9.09V

IC14	VIN	3.87V
	VREF	7.69V
	GND	1.32V

IC15	1 ~ 3	3.88V
	4	7.73V
	5	3.88V
	6	3.80V
	7 ~ 9	3.88V
	10	3.84V
	11	0V
	12, 13	3.88V
	14	3.87V

IC16	1	3.37V
	2, 3	3.87V
	4	0V
	5, 6	3.87V
	7	4.06V
	8	7.73V

IC17	1 ~ 3	-0.5V
	4	-9.90V
	5, 6	3.30V
	7	1.00V
	8	7.73V

IC18	1	8.55V
	2	3.00V
	3	8.53V
	4	2.99V
	5	2.87V
	6	2.88V
	7	2.87V
	8	0V
	10	2.87V
	11	0V
	12, 13	2.87V
	14	2.97V
	15	0.45V
	16	2.98V

	B	C	E
Q3	4.76V	—	—
Q5	—	4.77V	0V
Q6	2.07V	—	0V
Q7, 9	4.79V	—	0V
Q10, 11	—	—	0V
Q12	—	0V	—
Q13	—	—	0V
Q19 ~ 21	0V	5.45V	—
Q23	4.79V	—	0V
Q24	—	0V	4.76V
Q25	—	4.76V	4.79V
Q26	—	—	0V
Q30	—	5.46V	4.69V
Q31	—	0V	0V
Q32	—	5.39V	0V
Q33	0V	—	0V
Q34	4.76V	—	0V
Q40	—	5.45V	4.79V
Q41	—	—	0V
Q43	0V	—	—
Q46	—	—	4.55V
Q47	—	—	4.56V
Q48	—	—	4.55V
Q49	—	—	4.56V
Q50 ~ 53	—	0V	—
Q55	—	4.79V	4.70V
Q60, 61	—	—	0V
Q62	0V	—	0V
Q63	—	9.09V	3.87V
Q64	—	—	0V
Q65	4.78V	—	0V
Q66	3.87V	3.87V	—
Q67	—	-9.90V	—
Q70	—	—	0V
Q71	—	8.53V	0V
Q83	—	9.09V	—

Refer to the schematic diagram for the values of resistors and capacitors.



REMOTE CONTROL JACK

CASSETTE DOOR

AV. MIC

OSILLOSCOPE

(f) AUTOMATIC VOLUME : -500mV

POWER SUPPLY UNIT  
(X25-3010-11)(A/4)

MECHANISM ASS'Y D40-0341-05

FREQUENCY COUNTER

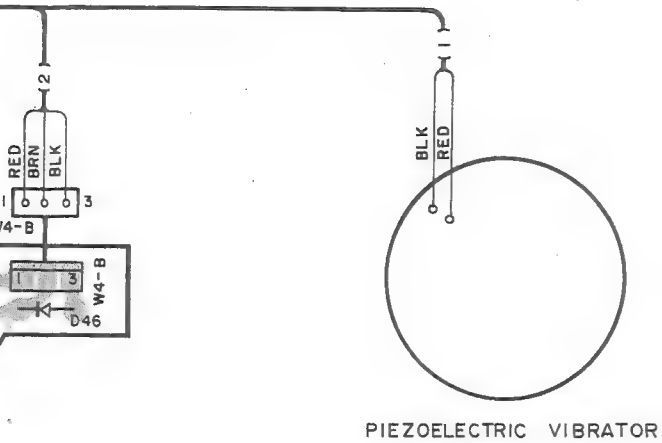
(b) CLOCK :  
1048.575KHz ± 25Hz

MOTOR

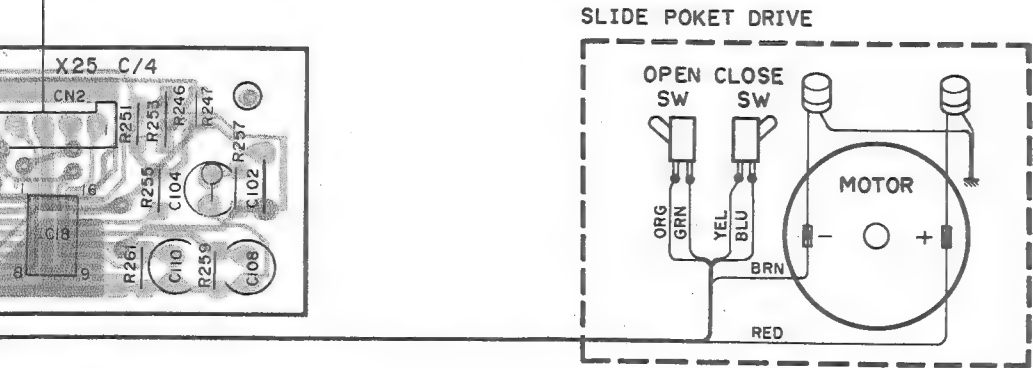
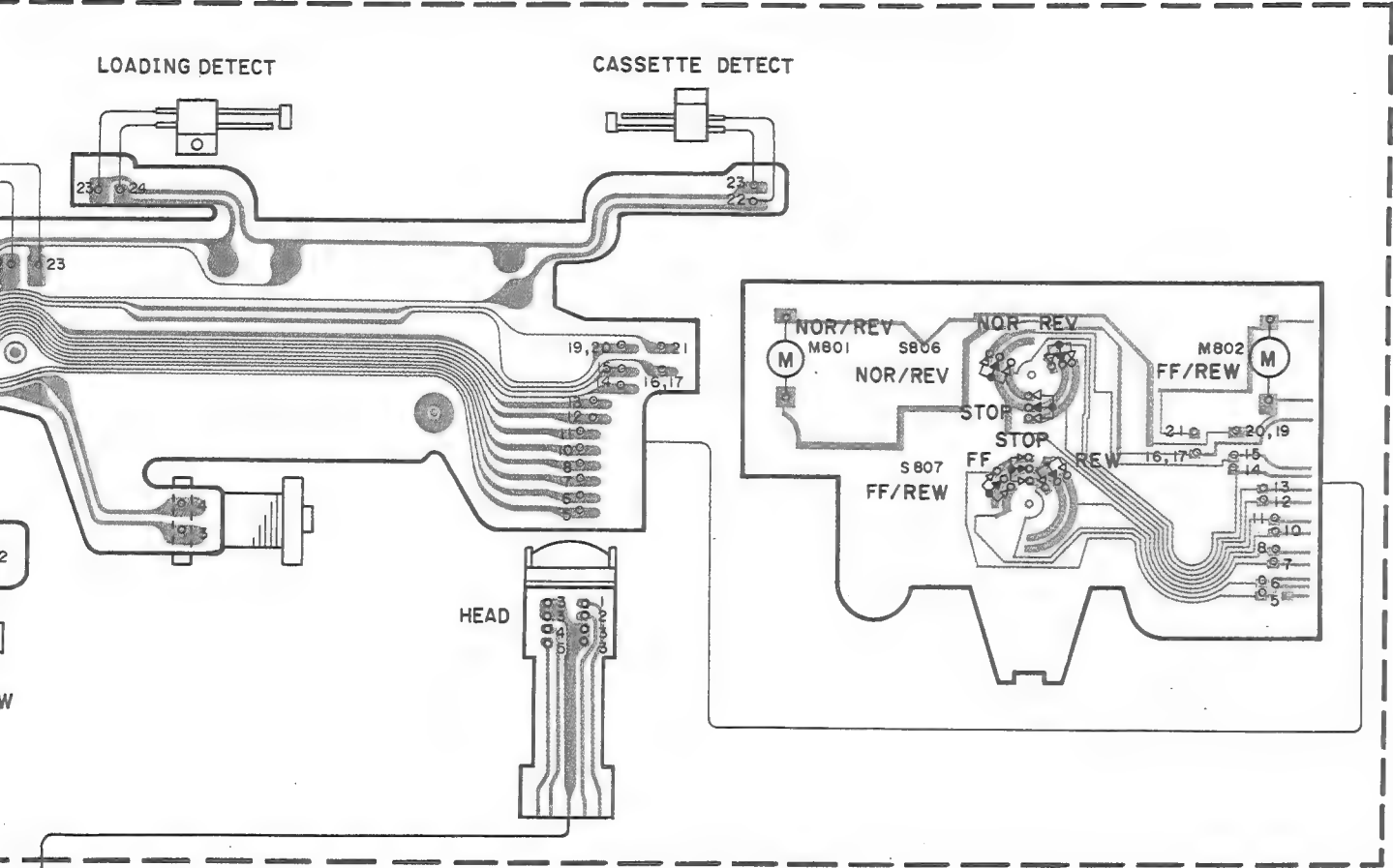
POWER SW



FOIL SIDE VIEW)



PIEZOELECTRIC VIBRATOR



FRONT  
KRC-999MKII(K)(I/4)

(X25-3010-11)

IC1	
1 ~ 3	0V
7	4.76V
10	0V
11	4.77V
12	4.69V
13	4.75V
26	0V
29	0V
30	4.69V
31	4.70V
32	0.50V
33	0.26V
34	0V
35	5.39V
36	0V
37	4.78V
39	4.79V
40 ~ 42	0V
43	4.79V
44 ~ 53	0V
54, 55	4.79V
56	2.07V
58	4.79V
59 ~ 61	0V
62	4.77V
63	0V

IC2	
4	4.91V
5	4.76V
6	0V
7	4.76V
8	0V
9	4.76V
10	0V
11	4.75V
13 ~ 15	0V
17	4.79V
19, 20	0V
21	4.79V
22	0V
24 ~ 26	0V
27	4.76V
29 ~ 37	0V
43	4.75V

IC3	
I	4.76V
O	4.76V
GND	0V

IC4	
1	4.25V
3	2.48V
4 ~ 7	0V
8	5.00V
9 ~ 10	0V
11	5.45V
12 ~ 16	0V

IC5	
1 ~ 4	0V
5	2.56V
6	0V
7	5.48V
8	2.55V

IC6	
1	4.55V
3, 4	4.54V
5, 6	4.53V
7 ~ 9	4.55V
10	4.56V
11 ~ 13	4.55V
14 ~ 16	0V
17	9.09V
18 ~ 20	0V
21 ~ 23	4.55V
24	4.56V
25, 26	4.55V
27	4.56V
28, 29	4.53V
30 ~ 32	4.55V
33	4.56V
34	4.54V
35	4.56V
36, 37	4.55V
38, 39	9.09V
40	0V
41	4.56V
42	4.55V
43	4.56V
44	4.54V

IC7	
1 ~ 3	4.56V
4	0V
5 ~ 7	4.56V

IC8, 9	
1, 2	4.60V
3	4.50V
4	0V
5	4.50V
6, 7	4.60V

IC10	
1	4.61V
2	4.60V
3	4.51V
4	0V
5	4.52V
6	4.57V
7	4.60V

IC12	
2	2.30V
4	0V
5	2.40V
8	5.46V

IC13	
1	4.62V
2	4.85V
3	4.50V
4	0V
5	4.60V
6	4.62V
7	5.00V
8	9.09V

IC14	
VIN	3.87V
VREF	7.69V
GND	1.32V

IC15	
1 ~ 3	3.88V
4	7.73V
5	3.88V
6	3.80V
7 ~ 9	3.88V
10	3.84V
11	0V
12, 13	3.88V
14	3.87V

IC16	
1	3.37V
2, 3	3.87V
4	0V
5, 6	3.87V
7	4.06V
8	7.73V

IC17	
1 ~ 3	-0.5V
4	-9.90V
5, 6	3.30V
7	1.00V
8	7.73V

IC18	
1	8.55V
2	3.00V
3	8.53V
4	2.99V
5	2.87V
6	2.88V
7	2.87V
8	0V
10	2.87V
11	0V
12, 13	2.87V
14	2.97V
15	0.45V
16	2.98V

	B	C	E
Q3	4.76V	—	—
Q5	—	4.77V	0V
Q6	2.07V	—	0V
Q7, 9	4.79V	—	0V
Q10, 11	—	—	0V
Q12	—	0V	—
Q13	—	—	0V
Q19 ~ 21	0V	5.45V	—
Q23	4.79V	—	0V
Q24	—	0V	4.76V
Q25	—	4.76V	4.79V
Q26	—	—	0V
Q30	—	5.46V	4.69V
Q31	—	0V	0V
Q32	—	5.39V	0V
Q33	0V	—	0V
Q34	4.76V	—	0V
Q40	—	5.45V	4.79V
Q41	—	—	0V
Q43	0V	—	—
Q46	—	—	4.55V
Q47	—	—	4.56V
Q48	—	—	4.55V
Q49	—	—	4.56V
Q50 ~ 53	—	0V	—
Q55	—	4.79V	4.70V
Q60, 61	—	—	0V
Q62	0V	—	0V
Q63	—	9.09V	3.87V
Q64	—	—	0V
Q65	4.78V	—	0V
Q66	3.87V	3.87V	—
Q67	—	-9.90V	—
Q70	—	—	0V
Q71	—	8.53V	0V
Q83	—	9.09V	—

Refer to the schematic diagram for the values of resistors and capacitors.



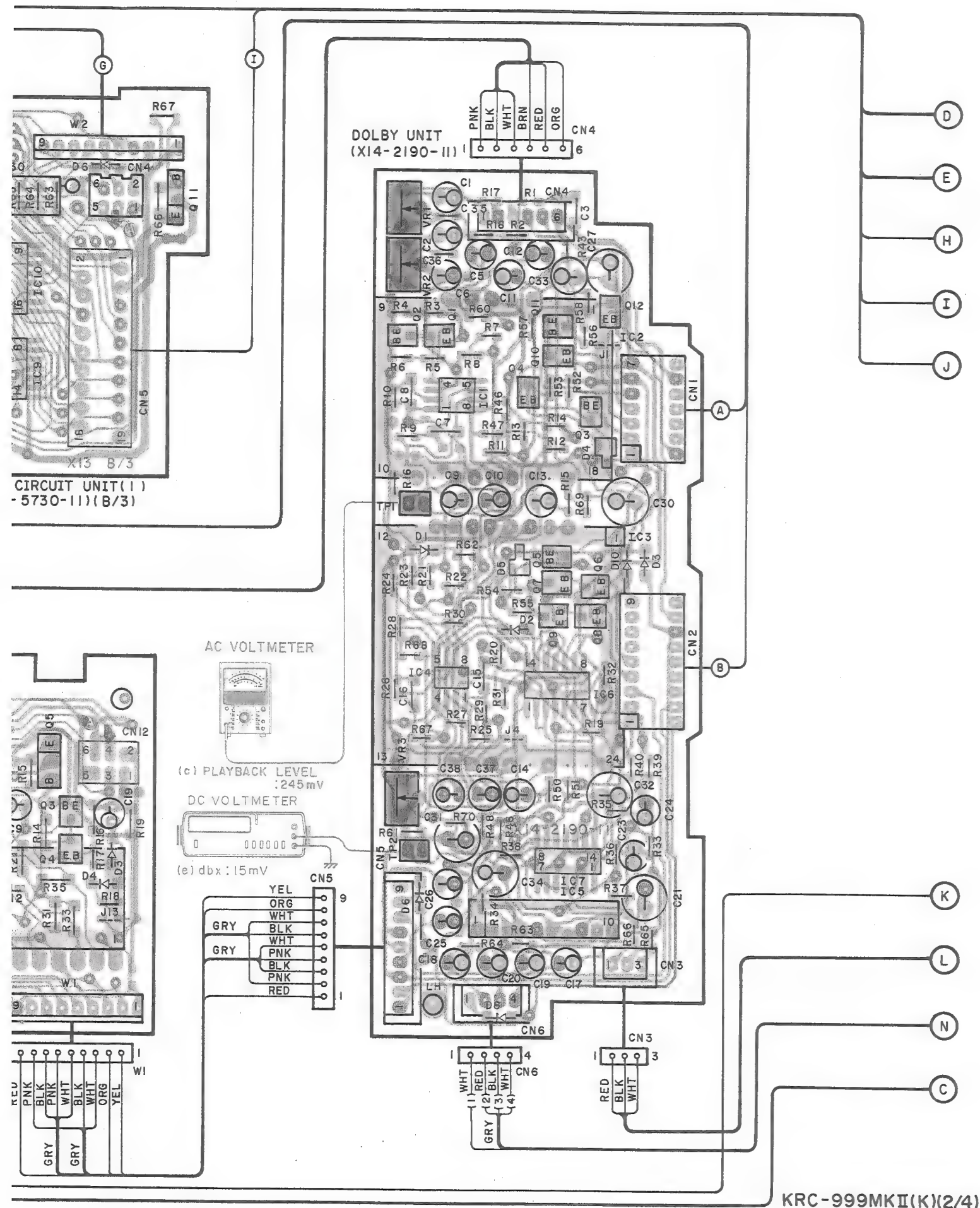
## A vertical ruler with markings from 1 to 7. The markings are black numbers on a white background, with a black line running vertically through the center. The ruler is positioned on the left side of the page.



KRC-999MKII(K)(2/4)



# PC BOARD (COMPONENT SIDE VIEW)



KRC-999MKII(K)(2/4)

(X13-5730-11)

IC1	
1	9.0V
2, 3	4.5V
4	0V
5 ~ 8	4.5V
9	2.3V
10 ~ 13	4.1V
14	0V
20 ~ 22	4.5V
23	0V
24 ~ 26	4.5V
27	4.1V

IC2	
1	8.8V
2 ~ 10	4.5V
14, 15	0V
16	5.0V
20	0V
22 ~ 27	4.5V

IC4	
3 ~ 5	4.9V
12, 13	4.9V
14	0V
19, 20	4.9V
21, 22	0V
39, 40	0V

IC5 ~ 9	
7	0V
14	4.9V

IC10	
8	0V
16	4.9V

IC3	
I	NORMAL : 4.9V RST : 0V
O	—
G	0V

	B	C	E
Q1	—	—	0V
Q2	—	9.0V	—
Q3, 4	—	—	0V
Q5	—	—	9.4V
Q9	—	NORMAL : 4.9V CLOSE : 0V	0V
Q10	—	—	0V
Q11	—	OPEN : 9.4V CLOSE : 0V	9.4V

(X14-2190-11)

IC1	
4	0V
8	9.0V

IC2	
3	OFF : 0V B : 4.5V C : 8.8V
4	4.2V
5	0V
6	4.2V
7	9.0V
10	4.5V
11	0V
12, 13	4.5V
14	9.0V
15, 16	4.5V
17	0V
18	4.5V

IC3	
7	0V
18	0V

IC4	
4	0V
8	9.0V

IC5	
1 ~ 3	4.5V
4	9.0V
5	4.5V
6	0V
8 ~ 10	4.5V

IC6	
1 ~ 3	4.5V
4	(TAPE) dbx ON : 9.0V 4.5V
7	0V
8 ~ 11	4.5V
12, 13	(TAPE) dbx OFF : 9.0V
14	9.0V

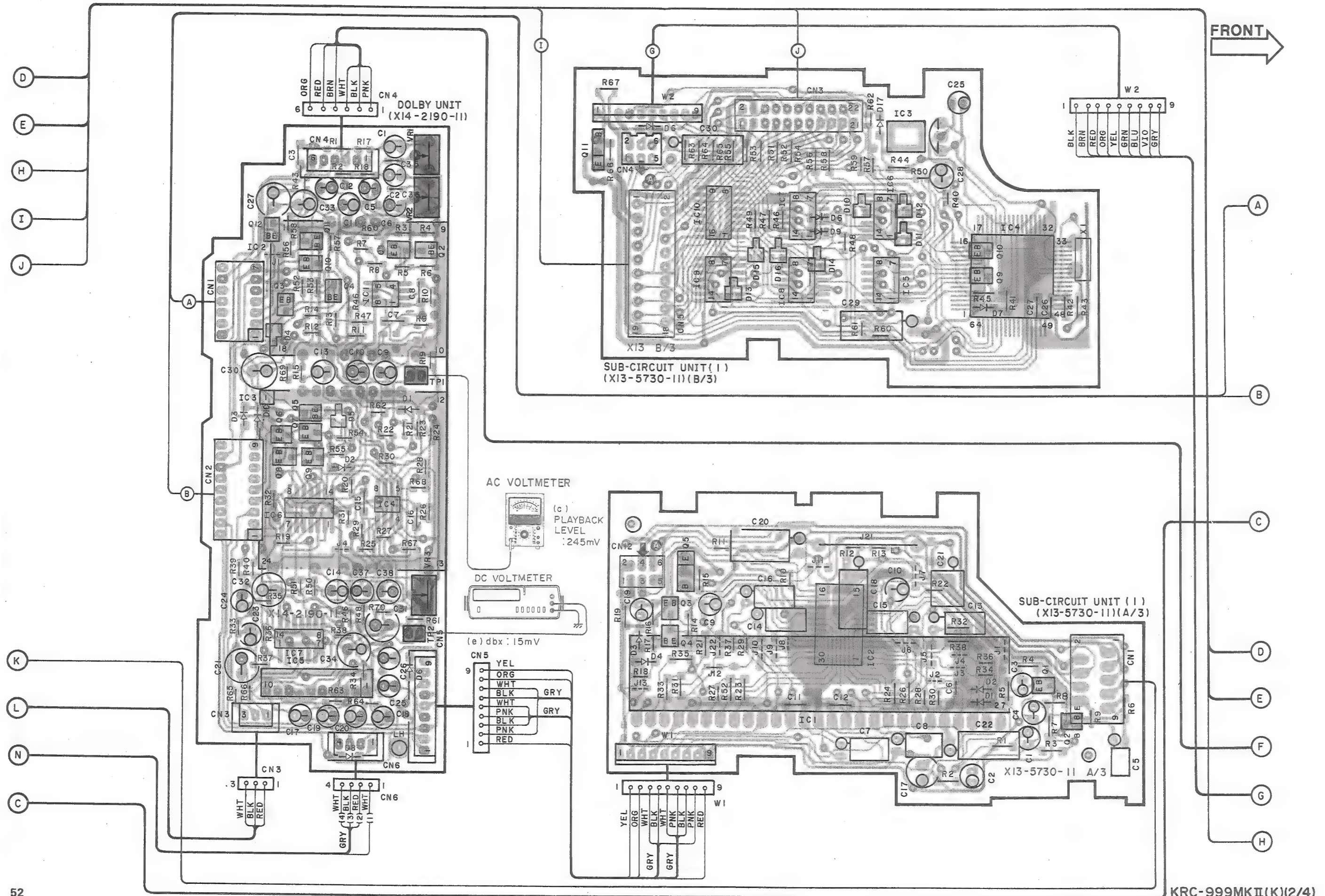
IC7	
1	4.5V
2, 3	3.7V
4	4.5V
5, 6	AUX : 9.0V
7	0V
8 ~ 11	4.5V
12, 13	TUNER : 9.0V
14	9.0V

	B	C	E
Q3	ON : 0V OFF : 4.8V	—	0V
Q4	—	—	0V
Q5	—	TUNER : 0V AUX : 0V	0V
Q6	AUX : 4.4V	—	0V
Q7	—	AUX : 9.0V	9.0V
Q8	TUNER : 4.4V	—	0V
Q9	—	TUNER : 9.0V	9.0V
Q10	OFF, B : 0V C : 4.8V	—	0V
Q11	—	—	9.0V
Q12	ON : 0V OFF : 4.8V	—	0V

Refer to the schematic diagram for the values of resistors and capacitors.

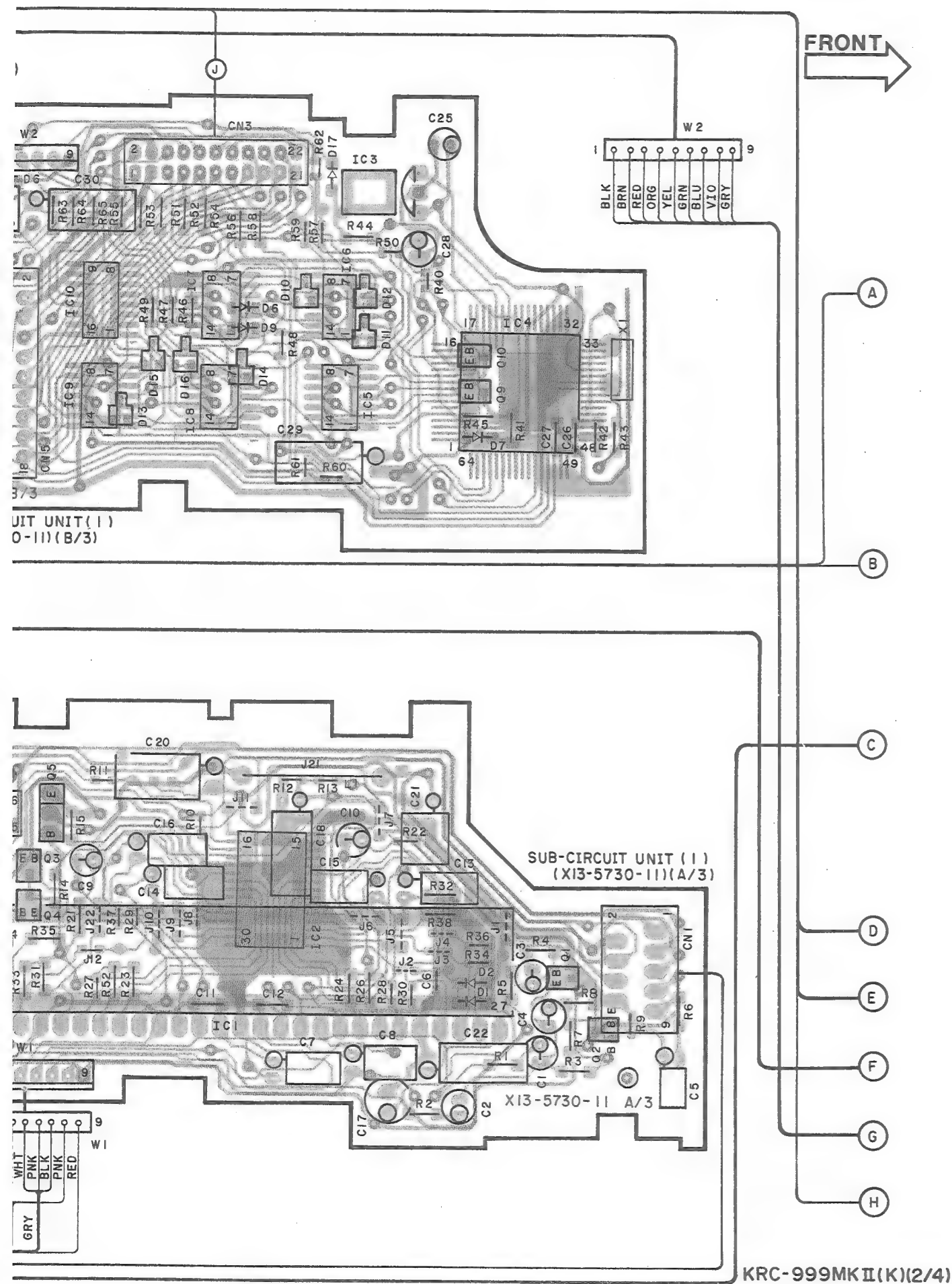


# PC BOARD (FOIL SIDE VIEW)





PC BOARD (FOIL SIDE VIEW)



KRC-999MKII(K)(2/4)

(X13-5730-11)

IC1	
1	9.0V
2, 3	4.5V
4	0V
5 ~ 8	4.5V
9	2.3V
10 ~ 13	4.1V
14	0V
20 ~ 22	4.5V
23	0V
24 ~ 26	4.5V
27	4.1V

IC2	
1	8.8V
2 ~ 10	4.5V
14, 15	0V
16	5.0V
20	0V
22 ~ 27	4.5V

IC4	
3 ~ 5	4.9V
12, 13	4.9V
14	0V
19, 20	4.9V
21, 22	0V
39, 40	0V

IC5 ~ 9	
7	0V
14	4.9V

IC10	
8	0V
16	4.9V

IC3	
I	NORMAL : 4.9V RST : 0V
O	—
G	0V

	B	C	E
Q1	—	—	0V
Q2	—	9.0V	—
Q3, 4	—	—	0V
Q5	—	—	9.4V
Q9	—	NORMAL : 4.9V CLOSE : 0V	0V
Q10	—	—	0V
Q11	—	OPEN : 9.4V CLOSE : 0V	9.4V

(X14-2190-11)

IC1	
4	0V
8	9.0V

IC2	
3	OFF : 0V B : 4.5V C : 8.8V
4	4.2V
5	0V
6	4.2V
7	9.0V
10	4.5V
11	0V
12, 13	4.5V
14	9.0V
15, 16	4.5V
17	0V
18	4.5V

IC3	
7	0V
18	0V

IC4	
4	0V
8	9.0V

IC5	
1 ~ 3	4.5V
4	9.0V
5	4.5V
6	0V
8 ~ 10	4.5V

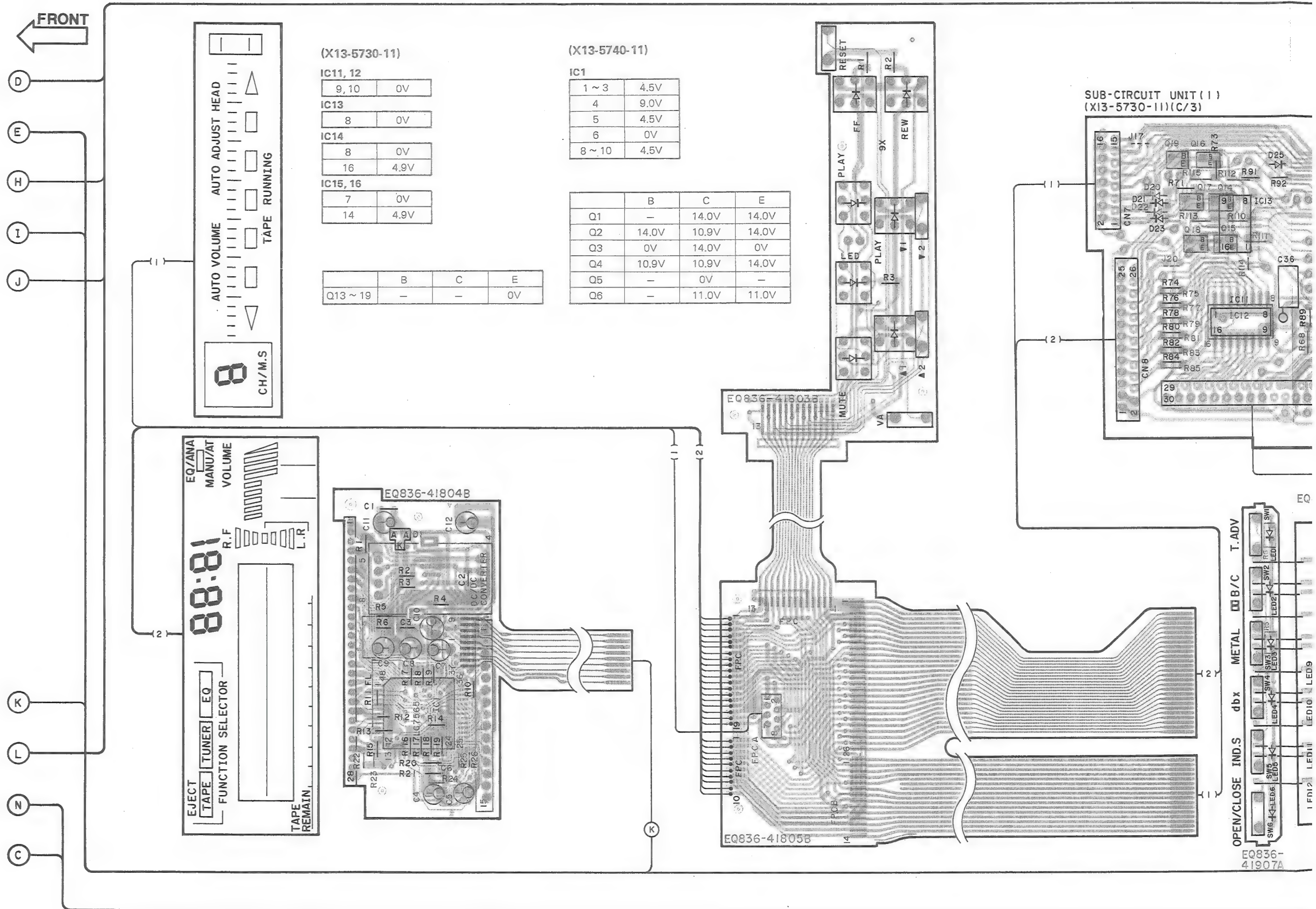
IC6	
1 ~ 3	4.5V
4	(TAPE) dbx ON : 9.0V 4.5V
7	0V
8 ~ 11	4.5V
12, 13	(TAPE) dbx OFF : 9.0V
14	9.0V

IC7	
1	4.5V
2, 3	3.7V
4	4.5V
5, 6	AUX : 9.0V
7	0V
8 ~ 11	4.5V
12, 13	TUNER : 9.0V
14	9.0V

	B	C	E
Q3	ON : 0V OFF : 4.8V	—	0V
Q4	—	—	0V
Q5	—	TUNER : 0V AUX : 0V	0V
Q6	AUX : 4.4V	—	0V
Q7	—	AUX : 9.0V	9.0V
Q8	TUNER : 4.4V	—	0V
Q9	—	TUNER : 9.0V	9.0V
Q10	OFF, B : 0V C : 4.8V	—	0V
Q11	—	—	9.0V
Q12	ON : 0V OFF : 4.8V	—	0V

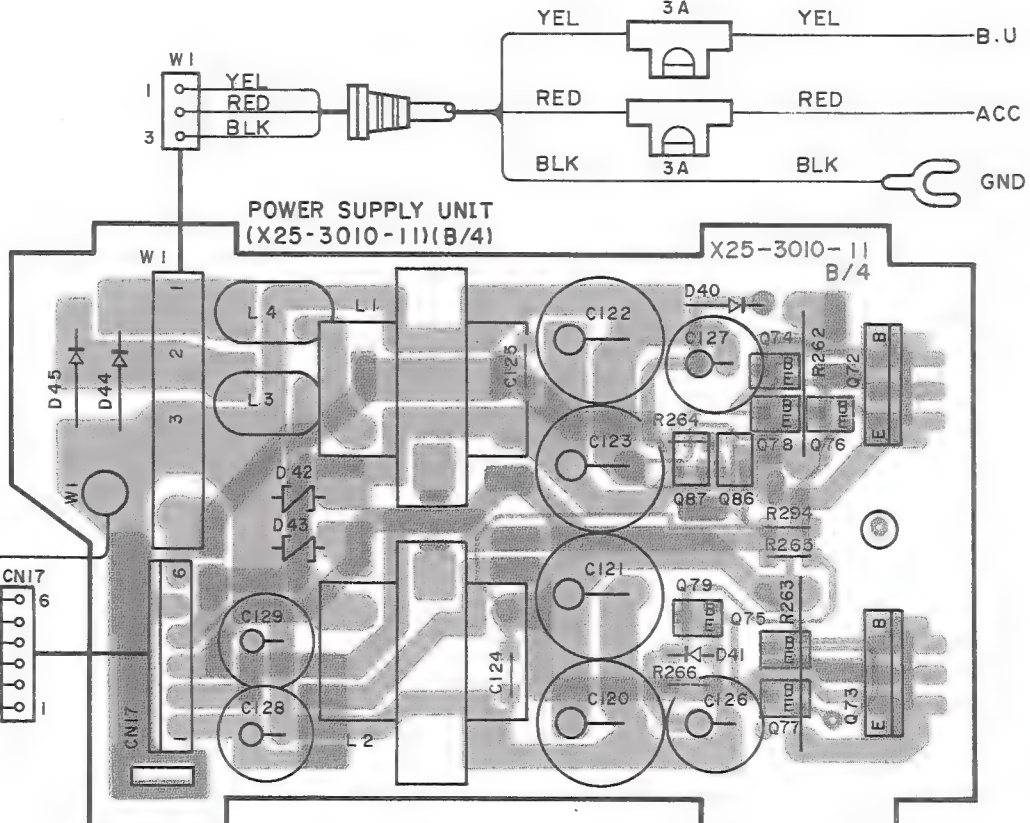
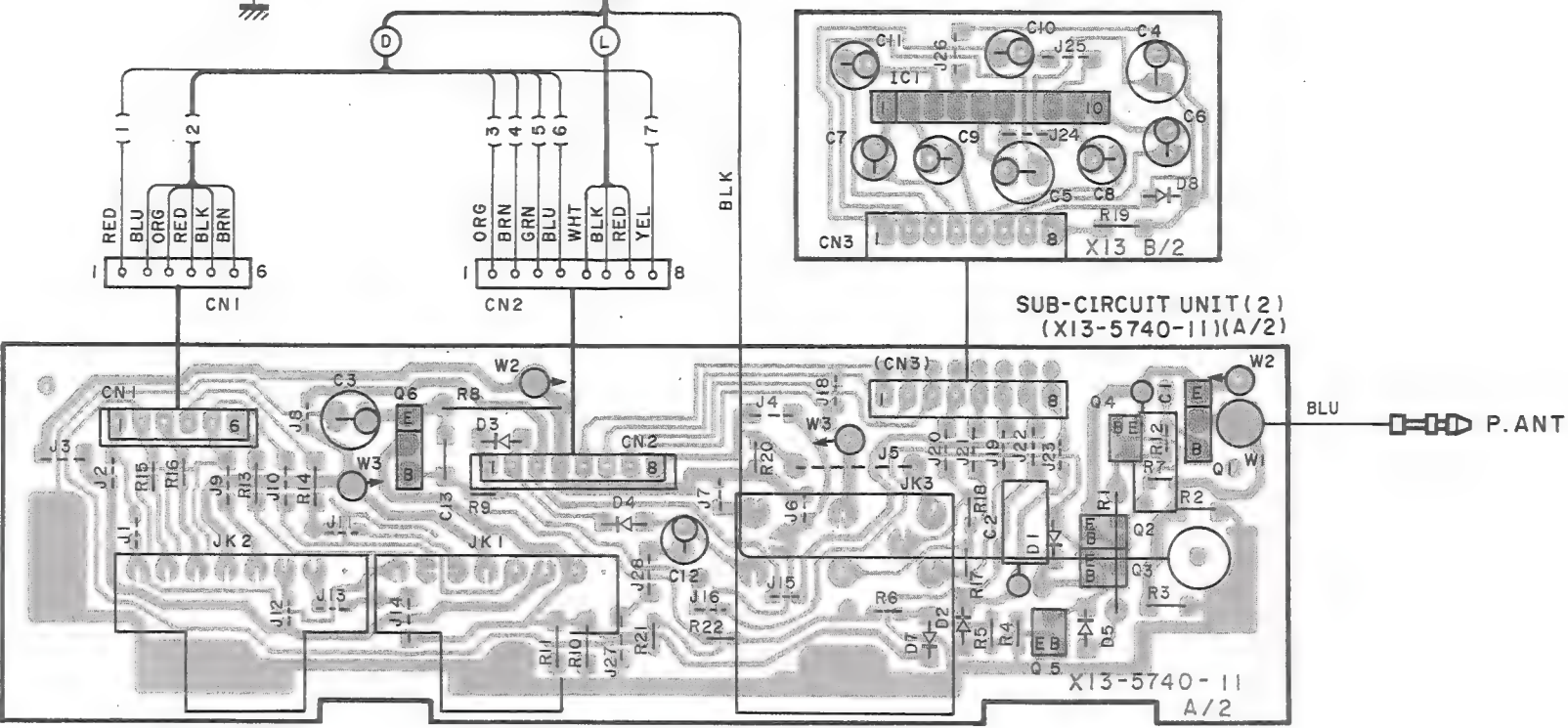
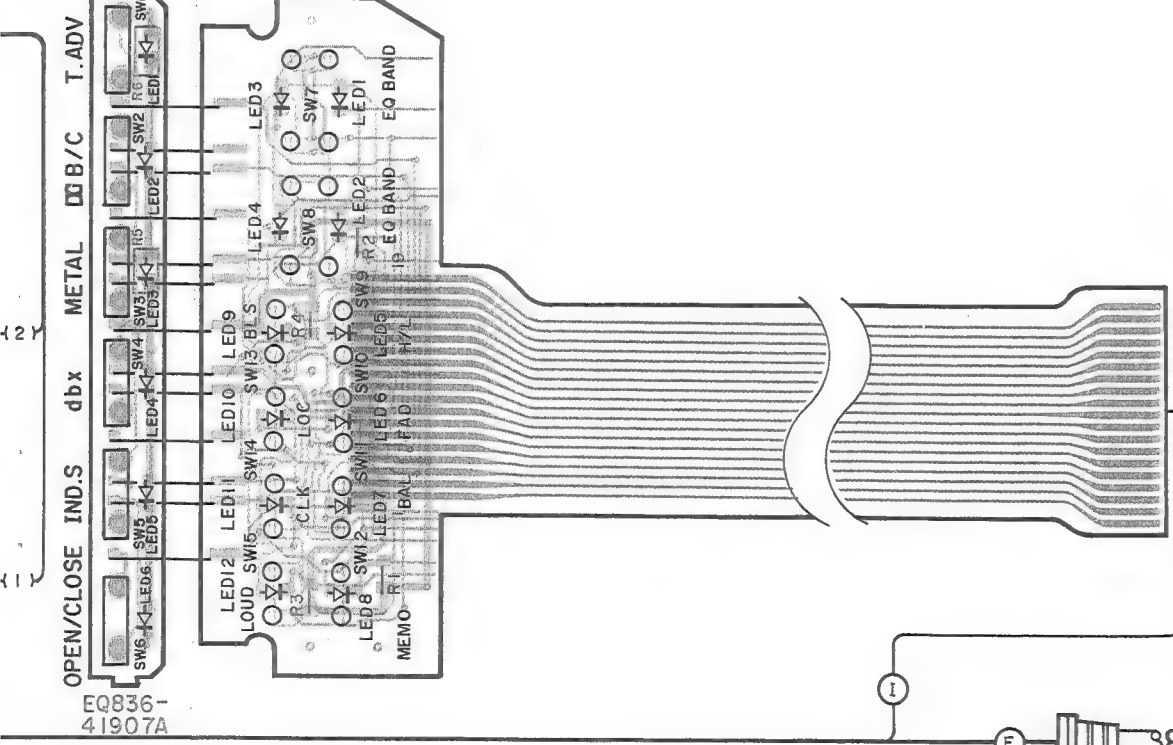
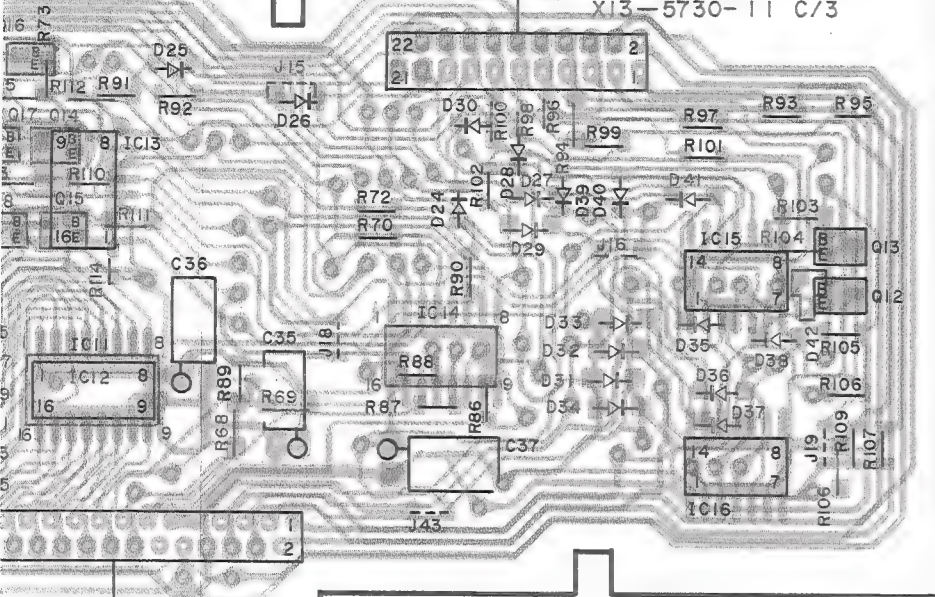
Refer to the schematic diagram for the values of resistors and capacitors.





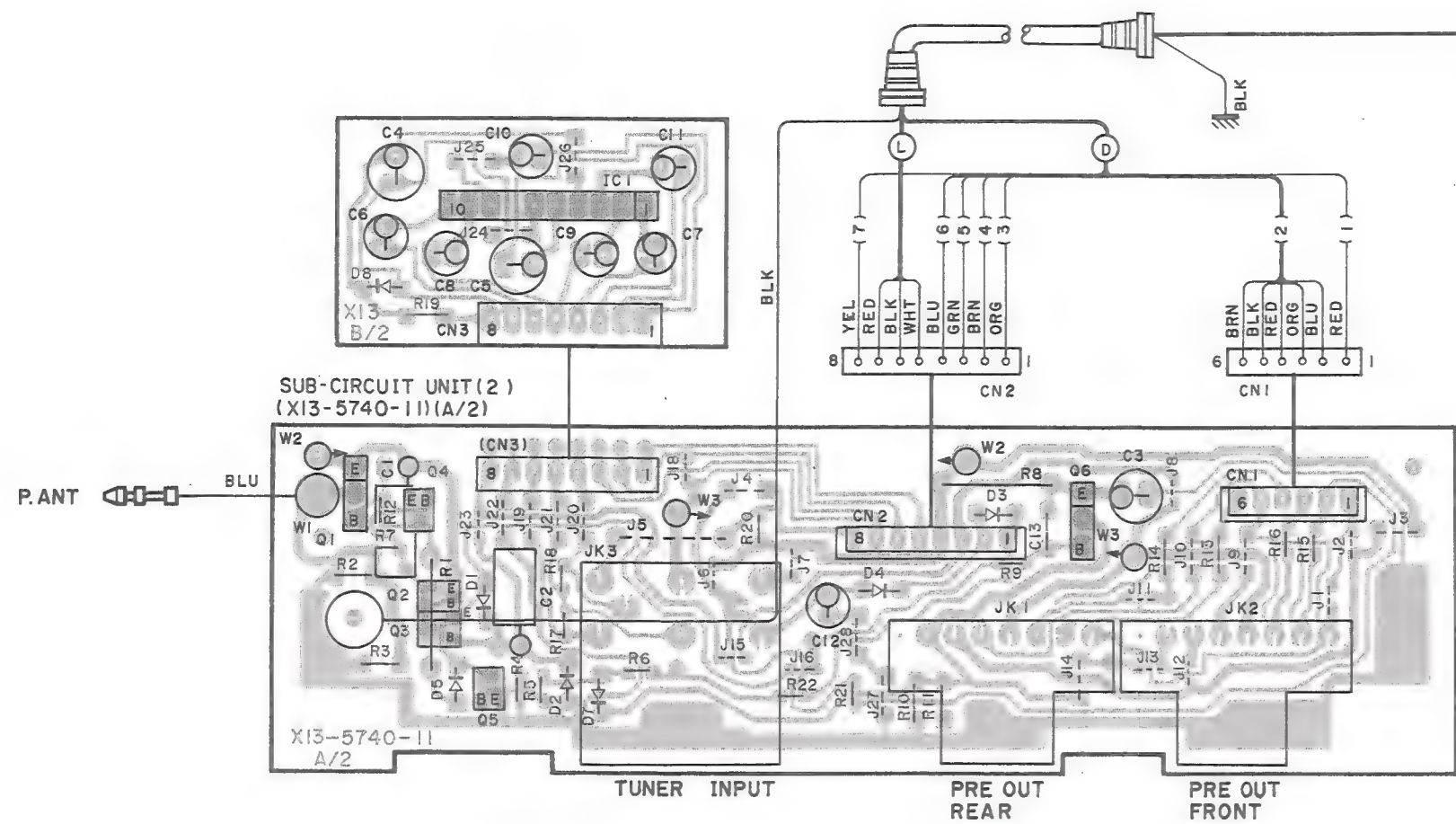


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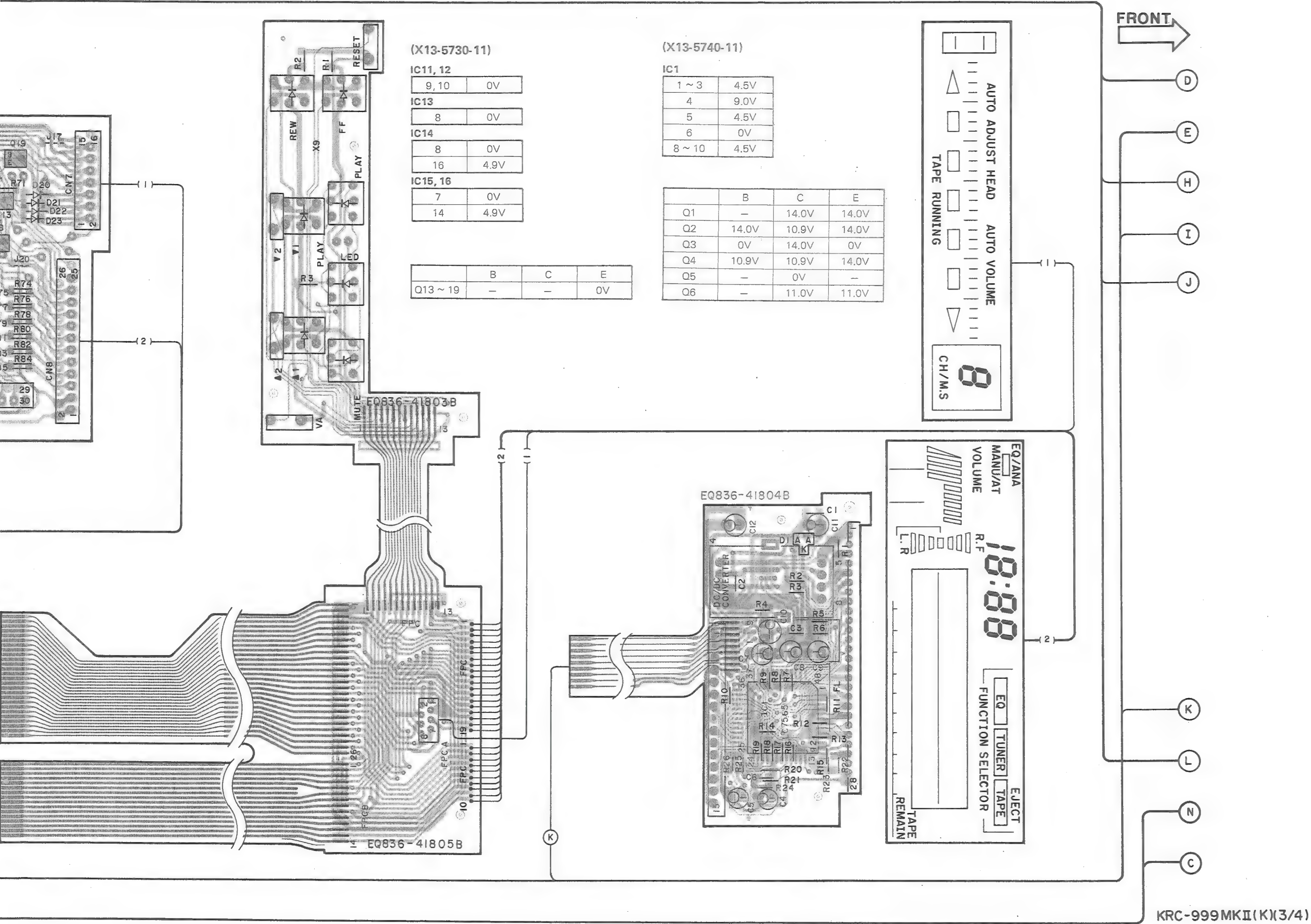
58







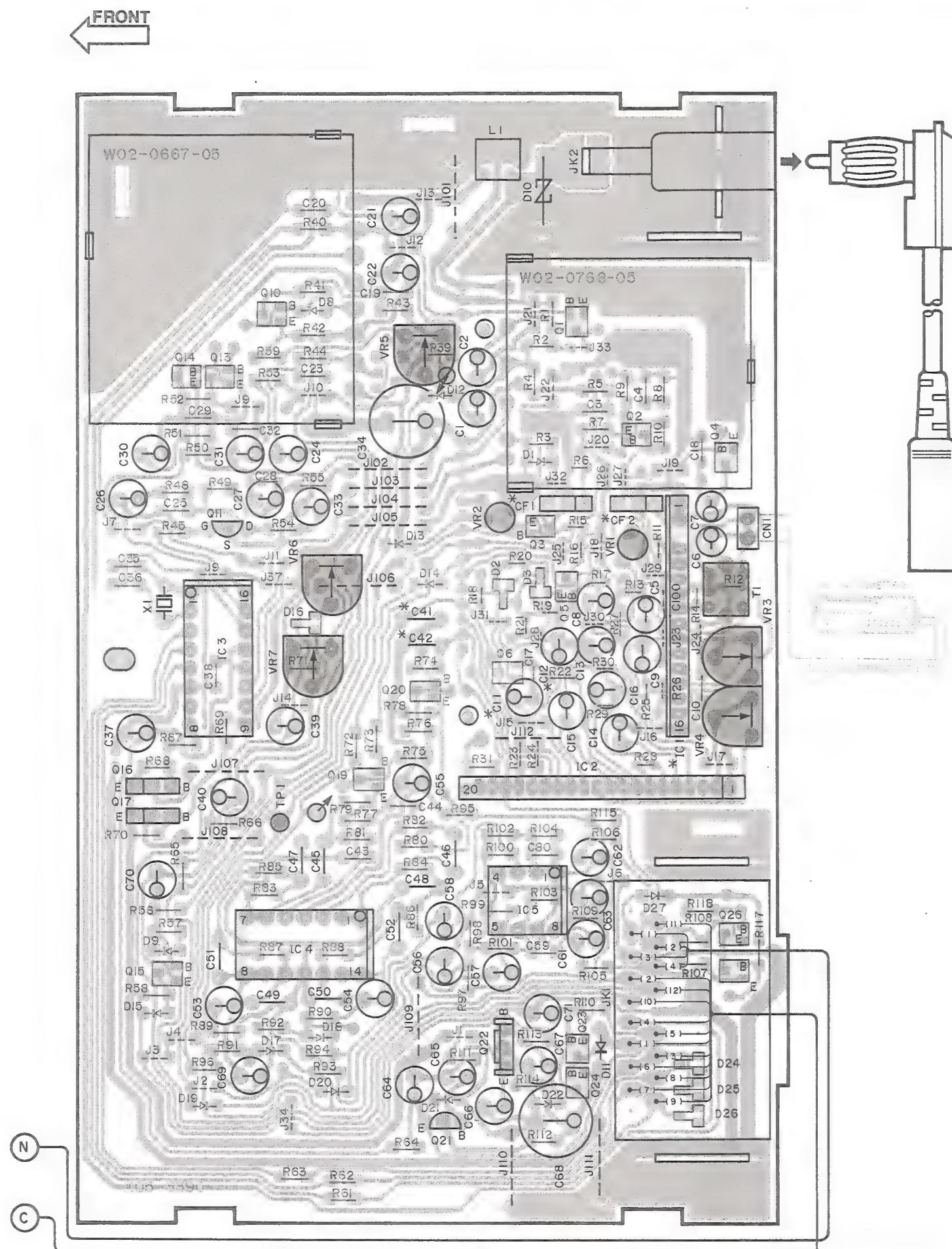
RD (FOIL SIDE VIEW)



Refer to the schematic diagram for the values of resistors and capacitors.



## PC BOARD (COMPONENT SIDE VIEW)



(X05-3390-11)

IC1

3	8.6V
4	2.5V
5	0V
6	5.6V
7 ~ 9	5.0V
11	9.2V
12	4.5V
13, 14	0V
15	1.2V
16	4.9V

IC4

1 ~ 3	3.0V
4	9.2V
5, 6	2.8V
7 ~ 10	3.0V
12 ~ 14	3.0V

IC5

1, 2	4.9V
3	2.5V
5	2.5V
6, 7	4.8V
8	9.5V

	B	C	E
Q3	5.6V	—	—
Q14	—	1.2 ~ 7.3V	—
Q16	—	9.5V	—
Q17	—	9.5V	10.1V
Q21	5.2V	—	5.7V
Q22	9.5V	—	10.1V

IC2

1	9.0V
2	4.3V
3	3.0V
4	3.6V
5	4.0V
7 ~ 9	0V
10	0.5V
11	4.2V
12	3.2V
13	3.5V
15	3.5V
16	2.0V
17	1.6V
18	0.8V
19	0.5V
20	0.7V

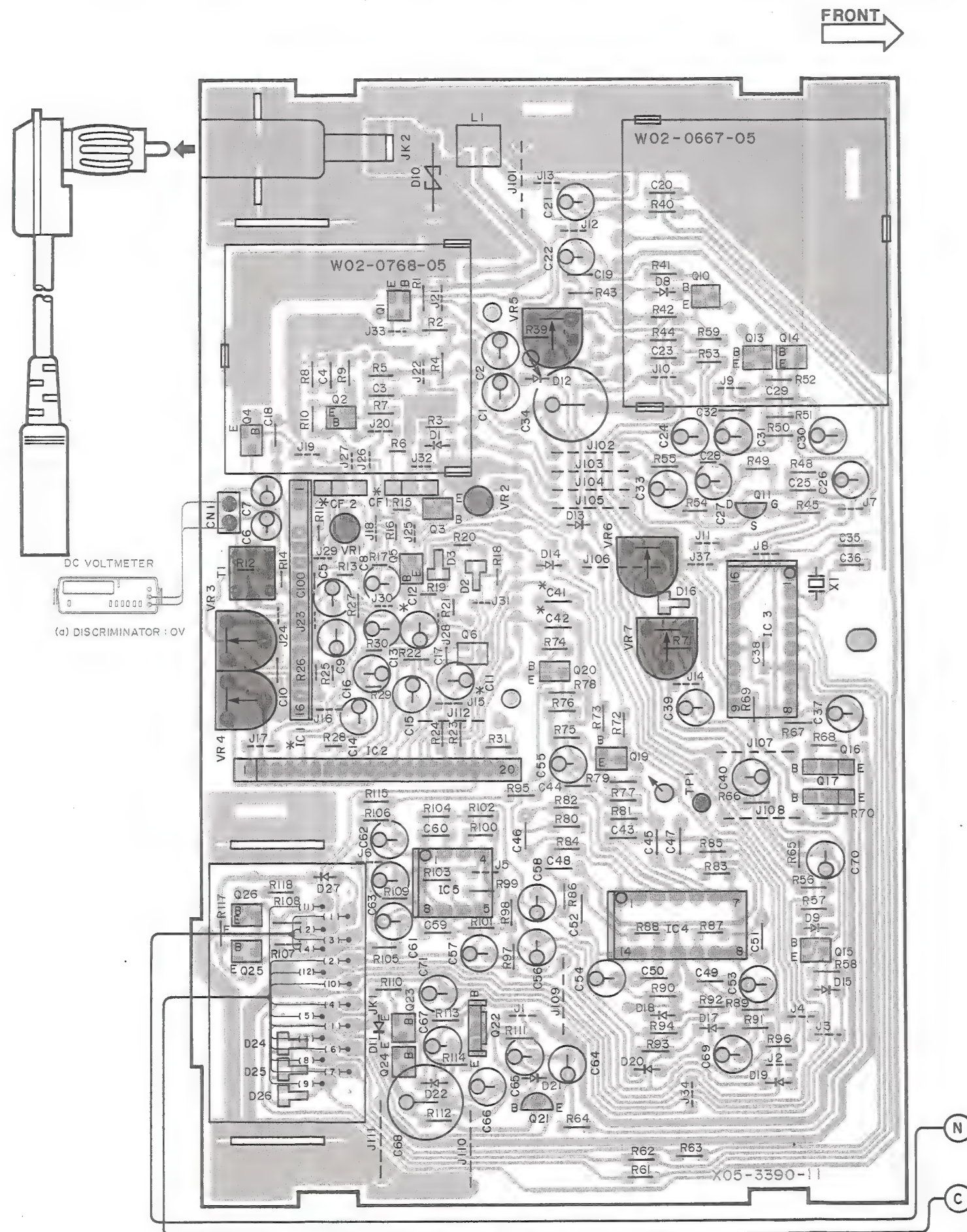
IC3

1	0.3V
2	1.0V
3 ~ 5	0V
8	9.2V
9	1.0V
10	0V
11	0.8V
12, 13	4.8V
15	1.2V

Refer to the schematic diagram for the values of resistors and capacitors.



# PC BOARD (FOIL SIDE VIEW)



(X05-3390-11)

IC1	
3	8.6V
4	2.5V
5	0V
6	5.6V
7 ~ 9	5.0V
11	9.2V
12	4.5V
13, 14	0V
15	1.2V
16	4.9V

IC2	
1	9.0V
2	4.3V
3	3.0V
4	3.6V
5	4.0V
7 ~ 9	0V
10	0.5V
11	4.2V
12	3.2V
13	3.5V
15	3.5V
16	2.0V
17	1.6V
18	0.8V
19	0.5V
20	0.7V

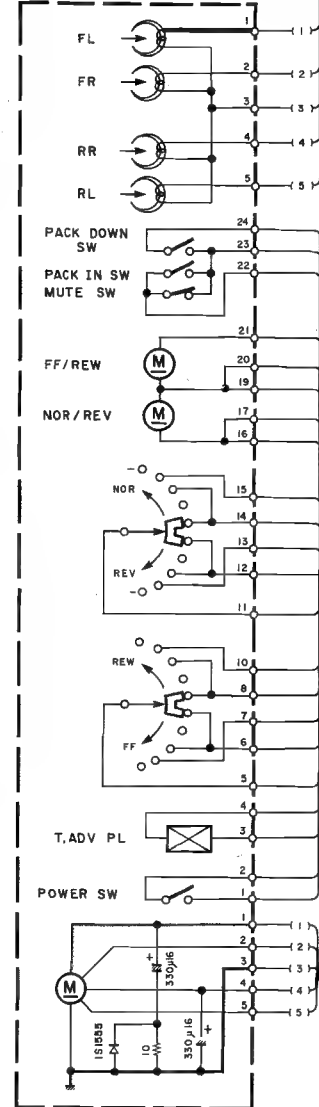
IC3	
1	0.3V
2	1.0V
3 ~ 5	0V
8	9.2V
9	1.0V
10	0V
11	0.8V
12, 13	4.8V
15	1.2V

IC4	
1 ~ 3	3.0V
4	9.2V
5, 6	2.8V
7 ~ 10	3.0V
12 ~ 14	3.0V

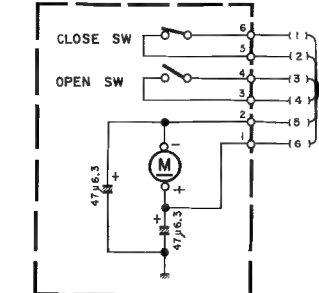
IC5	
1, 2	4.9V
3	2.5V
5	2.5V
6, 7	4.8V
8	9.5V

	B	C	E
Q3	5.6V	—	—
Q14	—	1.2 ~ 7.3V	—
Q16	—	9.5V	—
Q17	—	9.5V	10.1V
Q21	5.2V	—	5.7V
Q22	9.5V	—	10.1V

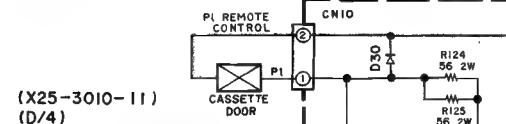
# CASSETTE MECHA (D40-0341-05)



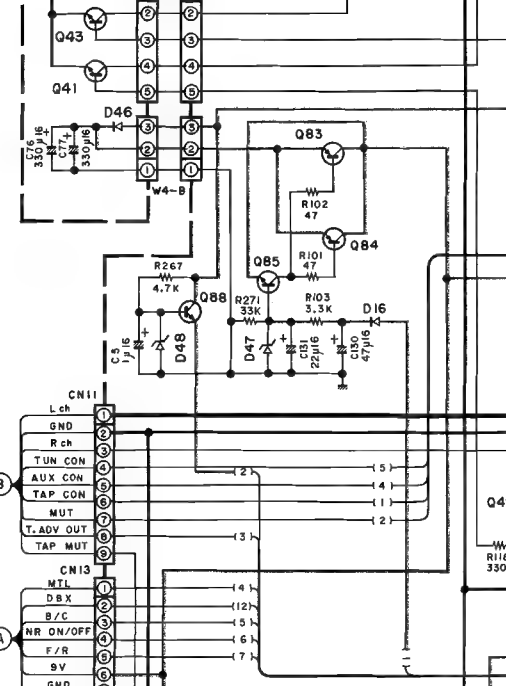
## SLIDE POCKET DRIVE



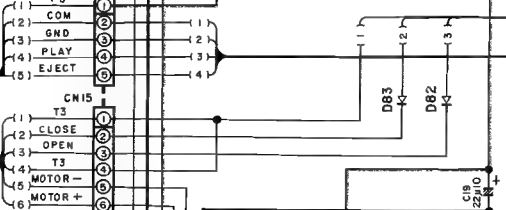
# (X25-3010-11) (A/4)



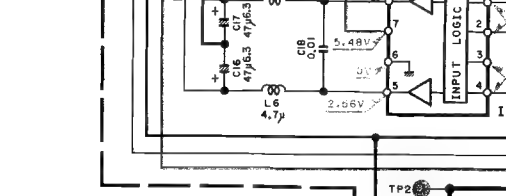
## (X25-3010-11) (D/4)



## (X25-3010-11) (E/4)



## (X25-3010-11) (F/4)



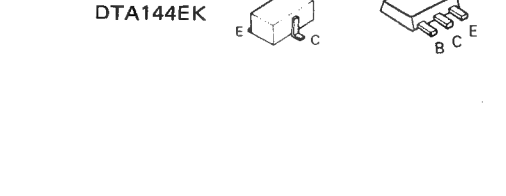
## (X25-3010-11) (G/4)



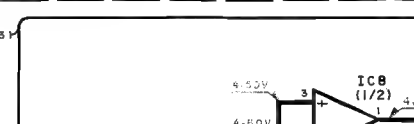
## (X25-3010-11) (H/4)



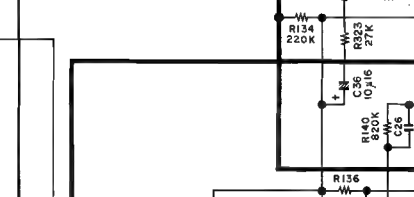
## (X25-3010-11) (I/4)



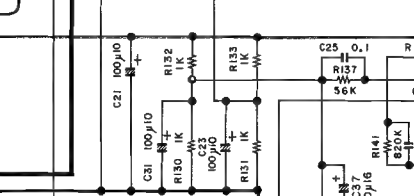
# (X25-3010-11) (J/4)



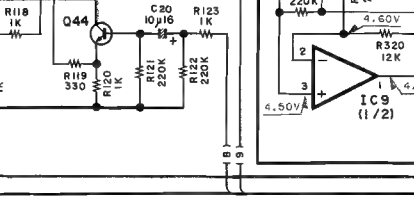
## (X25-3010-11) (K/4)



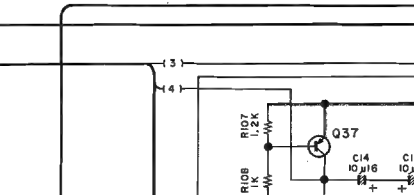
## (X25-3010-11) (L/4)



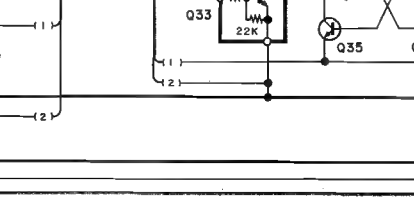
## (X25-3010-11) (M/4)



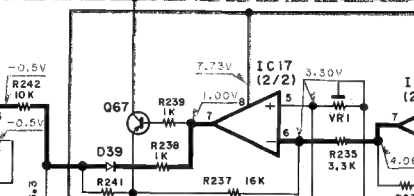
## (X25-3010-11) (N/4)



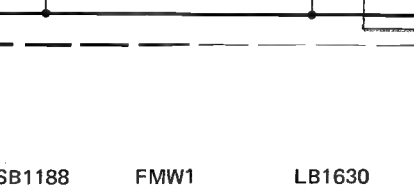
## (X25-3010-11) (O/4)



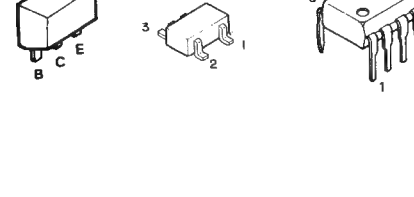
## (X25-3010-11) (P/4)



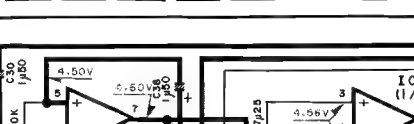
## (X25-3010-11) (Q/4)



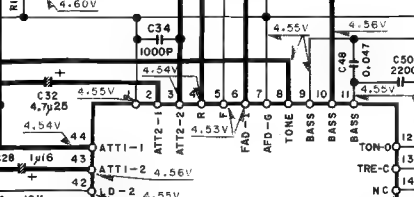
## (X25-3010-11) (R/4)



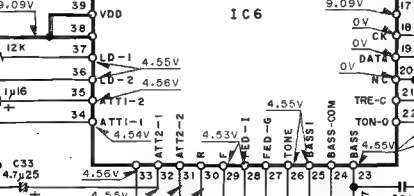
# (X25-3010-11) (S/4)



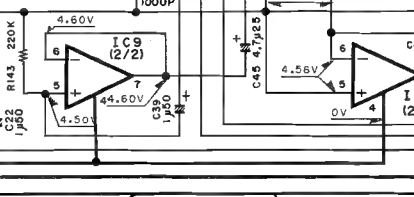
## (X25-3010-11) (T/4)



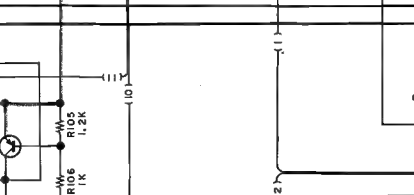
## (X25-3010-11) (U/4)



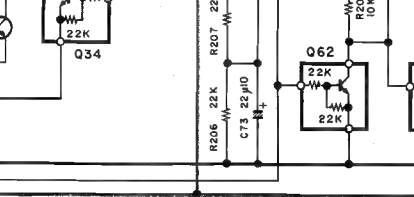
## (X25-3010-11) (V/4)



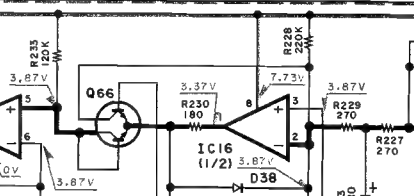
## (X25-3010-11) (W/4)



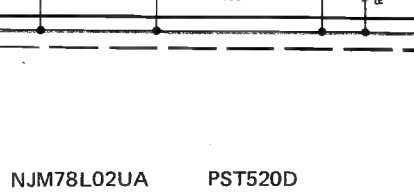
## (X25-3010-11) (X/4)



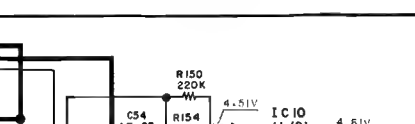
## (X25-3010-11) (Y/4)



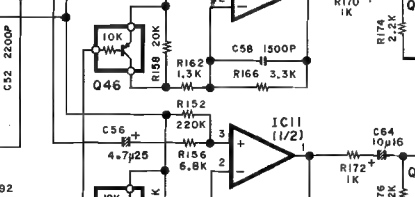
## (X25-3010-11) (Z/4)



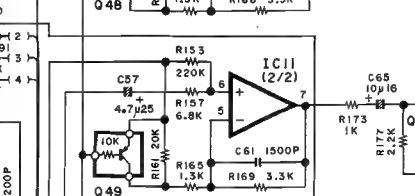
# (X25-3010-11) (AA/4)



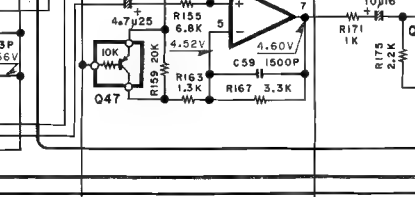
## (X25-3010-11) (AB/4)



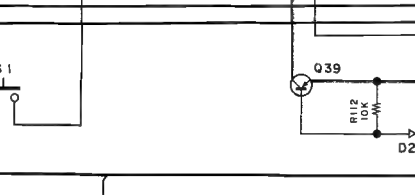
## (X25-3010-11) (AC/4)



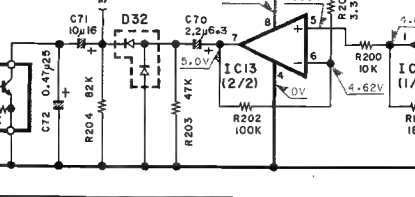
## (X25-3010-11) (AD/4)



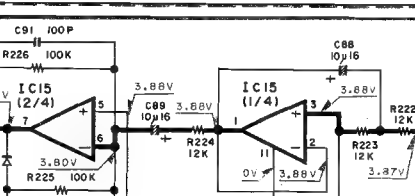
## (X25-3010-11) (AE/4)



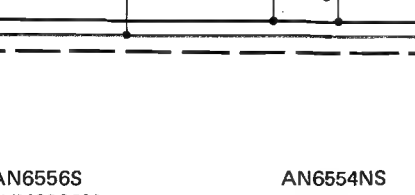
## (X25-3010-11) (AF/4)



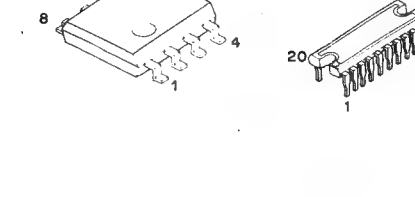
## (X25-3010-11) (AG/4)



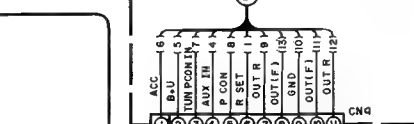
## (X25-3010-11) (AH/4)



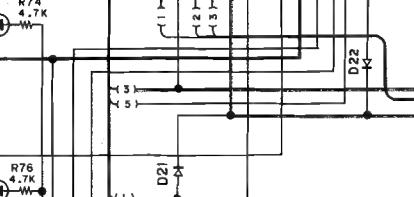
## (X25-3010-11) (AI/4)



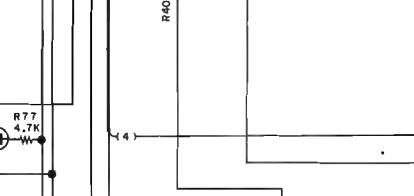
# (X25-3010-11) (AJ/4)



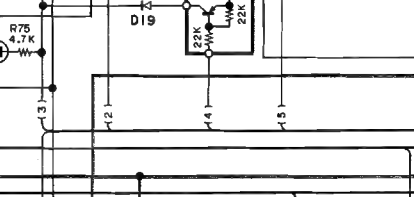
## (X25-3010-11) (AK/4)



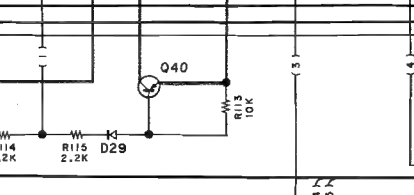
## (X25-3010-11) (AL/4)



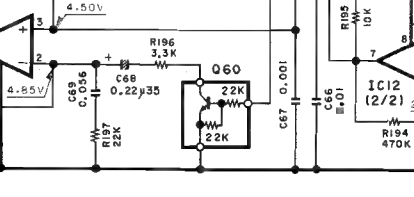
## (X25-3010-11) (AM/4)



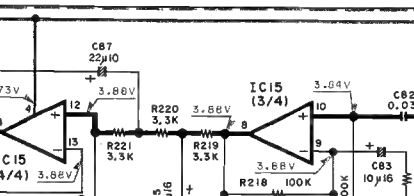
## (X25-3010-11) (AN/4)



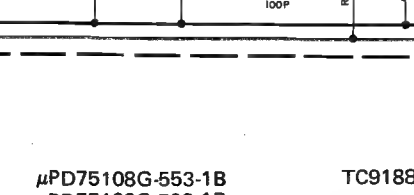
## (X25-3010-11) (AO/4)



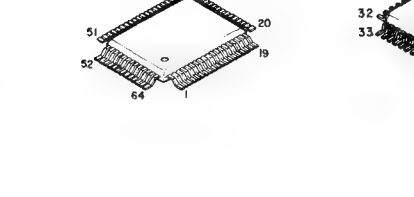
## (X25-3010-11) (AP/4)



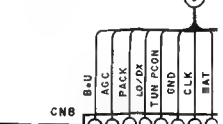
## (X25-3010-11) (AQ/4)



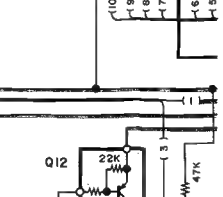
## (X25-3010-11) (AR/4)



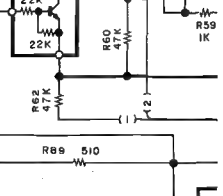
# (X25-3010-11) (AS/4)



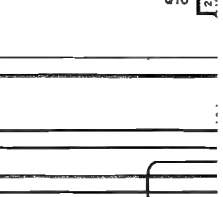
## (X25-3010-11) (AT/4)



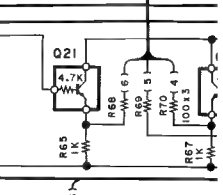
## (X25-3010-11) (AU/4)



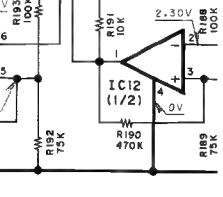
## (X25-3010-11) (AV/4)



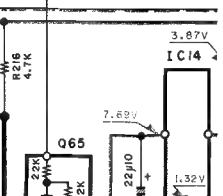
## (X25-3010-11) (AW/4)



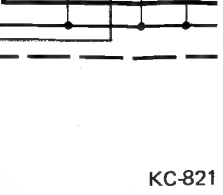
## (X25-3010-11) (AX/4)



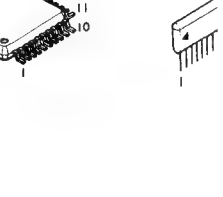
## (X25-3010-11) (AY/4)



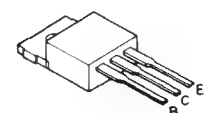
## (X25-3010-11) (AZ/4)



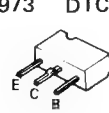
## (X25-3010-11) (BA/4)



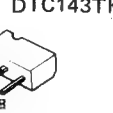
2SD1406



2SB822F



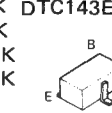
2SD1055F



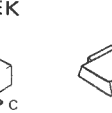
2SA1037K



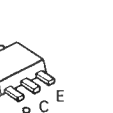
DTC124EK



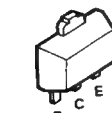
2SC2412K



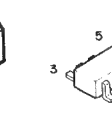
DTC143EK



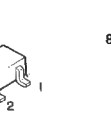
2SD1766



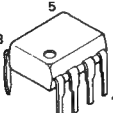
2SB1188



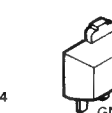
FMW1



LB1630



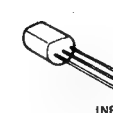
NJM78L02UA



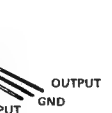
PST520D



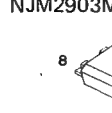
AN6556S



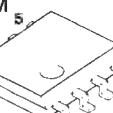
NJM2903M



AN6554NS



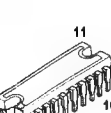
μPD75108G-553-1B



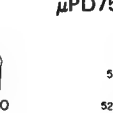
μPD75108G-599-1B



TC9188F

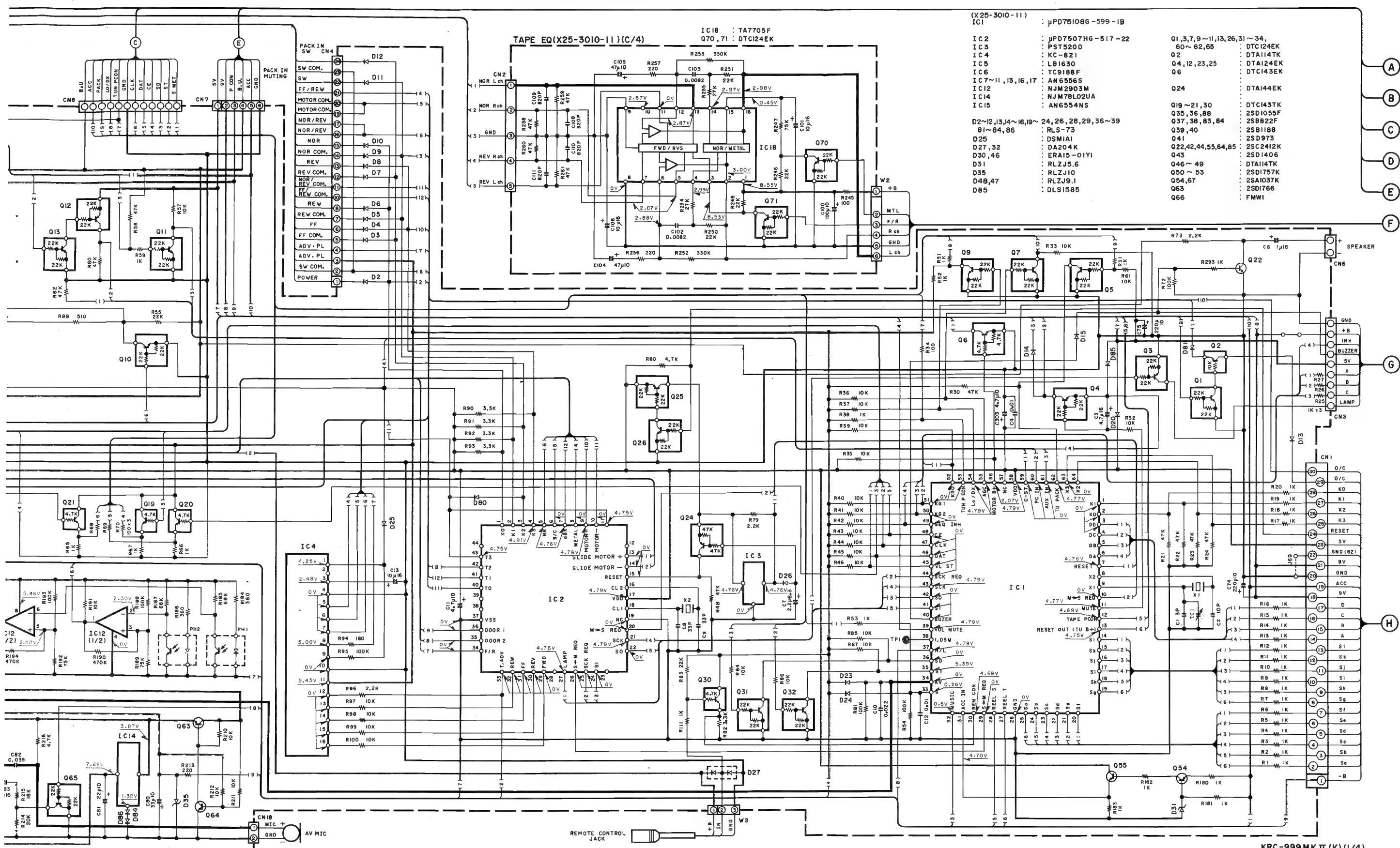


KC-821



SIGNAL LINE  
GND LINE  
P.D. LINE





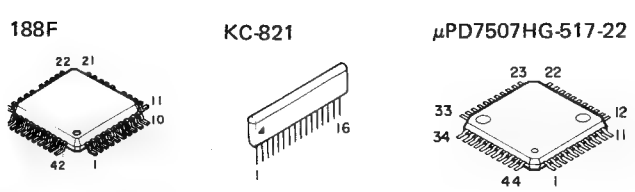
(X25-3010-11)  
IC1 :  $\mu$ PD751086-599-1B

IC2 :  $\mu$ PD7507HG-517-22  
IC3 : PST520D  
IC4 : KC-821  
IC5 : LB1630  
IC6 : TC9188F  
IC7~11, 13, 16, 17 : AN6556S  
IC12 : NJM2903M  
IC14 : NJM78L02UA  
IC15 : AN6554NS

D2~12, 13, 14~16, 19~24, 26, 28, 29, 36~39 : RLS-73  
D25 : DSMIAI  
D27, 32 : DA204K  
D30, 46 : ERA15-01YI  
D31 : RLZJ5.6  
D35 : RLZJ10  
D48, 47 : RLZJ9.1  
D85 : DLS1585

Q1, 3, 7, 9~11, 13, 26, 31~34, 60~62, 65 : DTC124EK  
Q2 : DTA114TK  
Q4, 12, 23, 25 : DTA124EK  
Q6 : DTC143EK  
Q24 : DTA144EK  
Q19~21, 30 : DTC143TK  
Q35, 36, 88 : 2SD1055F  
Q37, 38, 83, 84 : 2SB822F  
Q39, 40 : 2SB1188  
Q41 : 2SD973  
Q22, 42, 44, 55, 64, 85 : 2SC2412K  
Q43 : 2SD1406  
Q46~49 : DTA114TK  
Q50~53 : 2SD175TK  
Q54, 67 : 2SA1037K  
Q63 : 2SD1766  
Q66 : FMWI

KRC-999 MK II (K) (I/4)



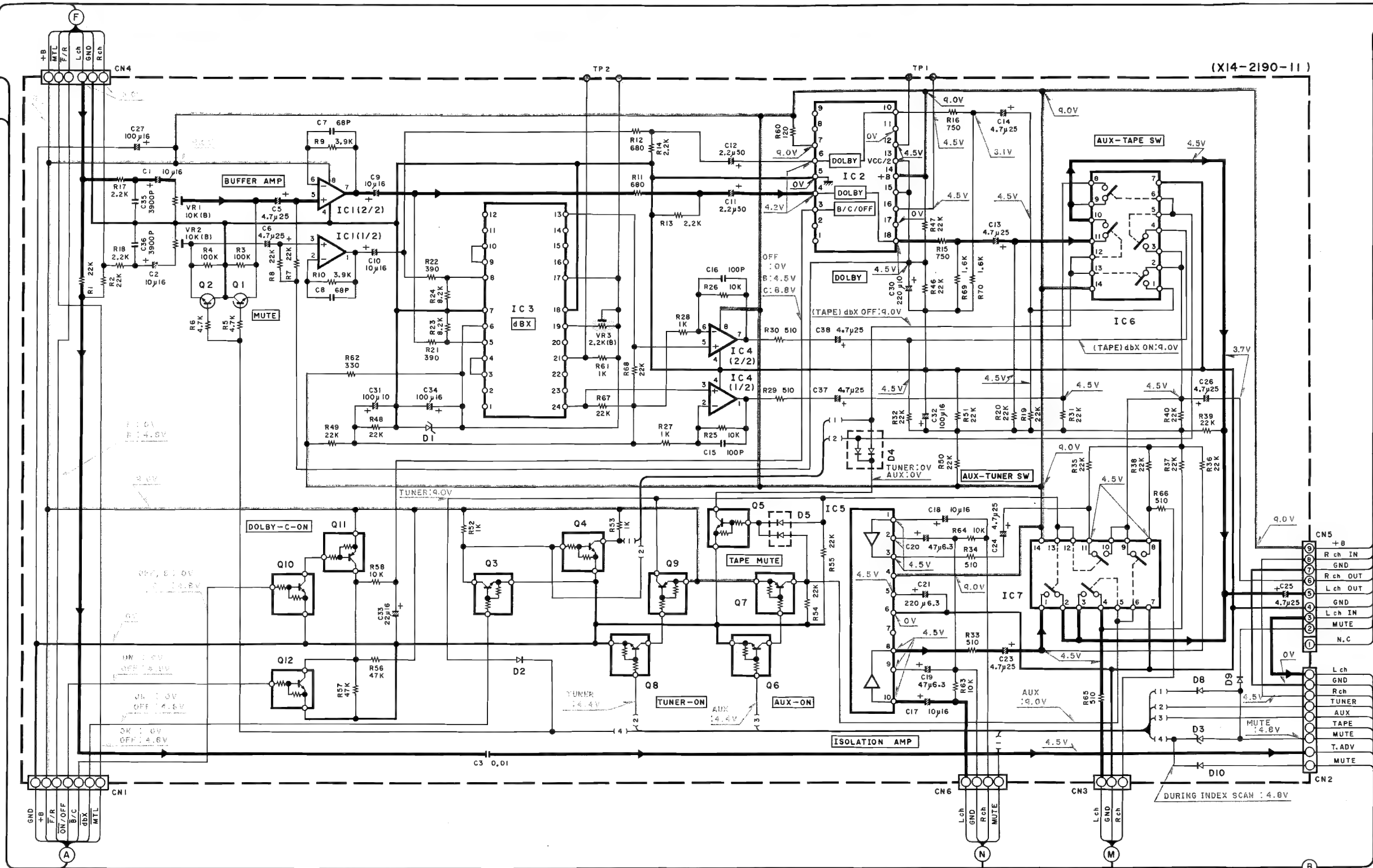
**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  Indicates safety critical components. To reduce the risk of electric shock, leakage current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen instrumenten oder Geräten u.U. geringfügig.

- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.



A  
B  
C  
D  
E  
F  
G  
H



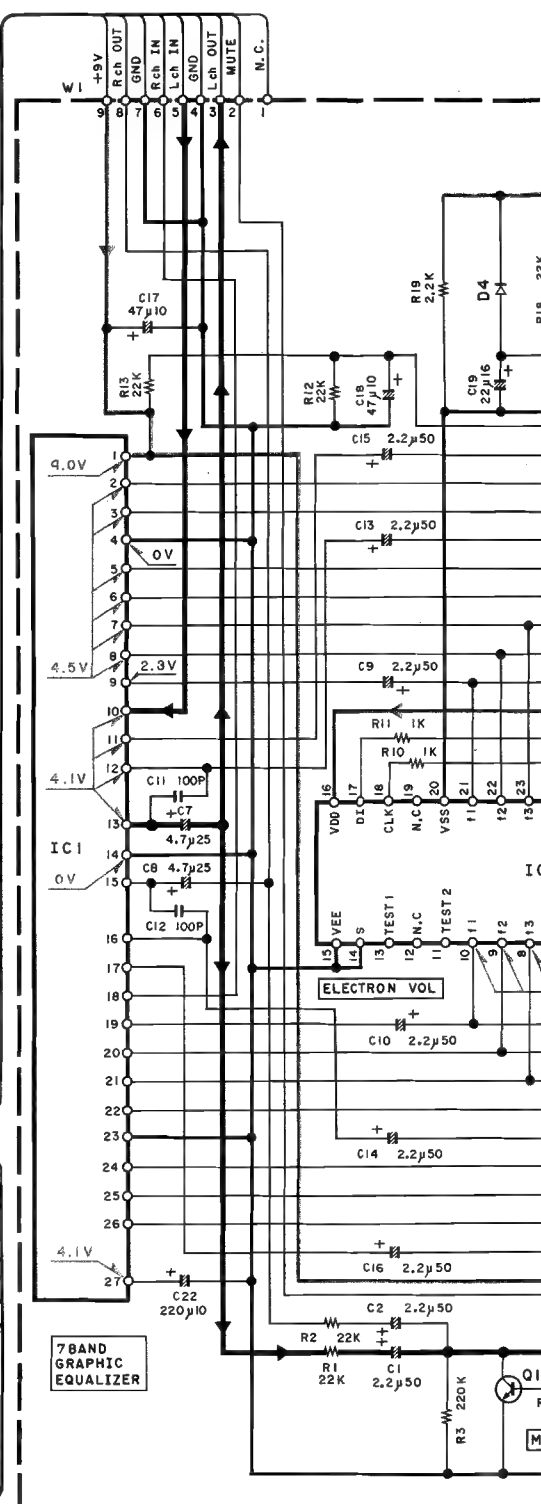
(X14-2190-11)  
 IC1,4 : AN6556S  
 IC2 : NR-9550 or BH-2421  
 IC3 : KC-877  
 IC5 : KC-855  
 IC6,7 :  $\mu$ PD4066BG  
 Q1,2 : 2SD1757K  
 Q3,5,6,8,10,12 : DTC124EK  
 Q4 : DTC144EK  
 Q7,9,11 : DTA124EK

D1 : RLZJ-5.1  
 D2,8~10 : RLS-73  
 D3 : RLZJ18  
 D4,5 : DAN202K

(X13-5730-11)  
 IC1 : KC-840  
 IC2 : LC7523M  
 IC3 : PST520D  
 IC4 : LC7060AN  
 IC5~9 :  $\mu$ PD4081BG  
 IC10 :  $\mu$ PD4028BG  
 Q1~4 : 2SC2412K  
 Q5,11 : 2SB822F  
 Q9 : DTA124EK  
 Q10 : DTC124EK

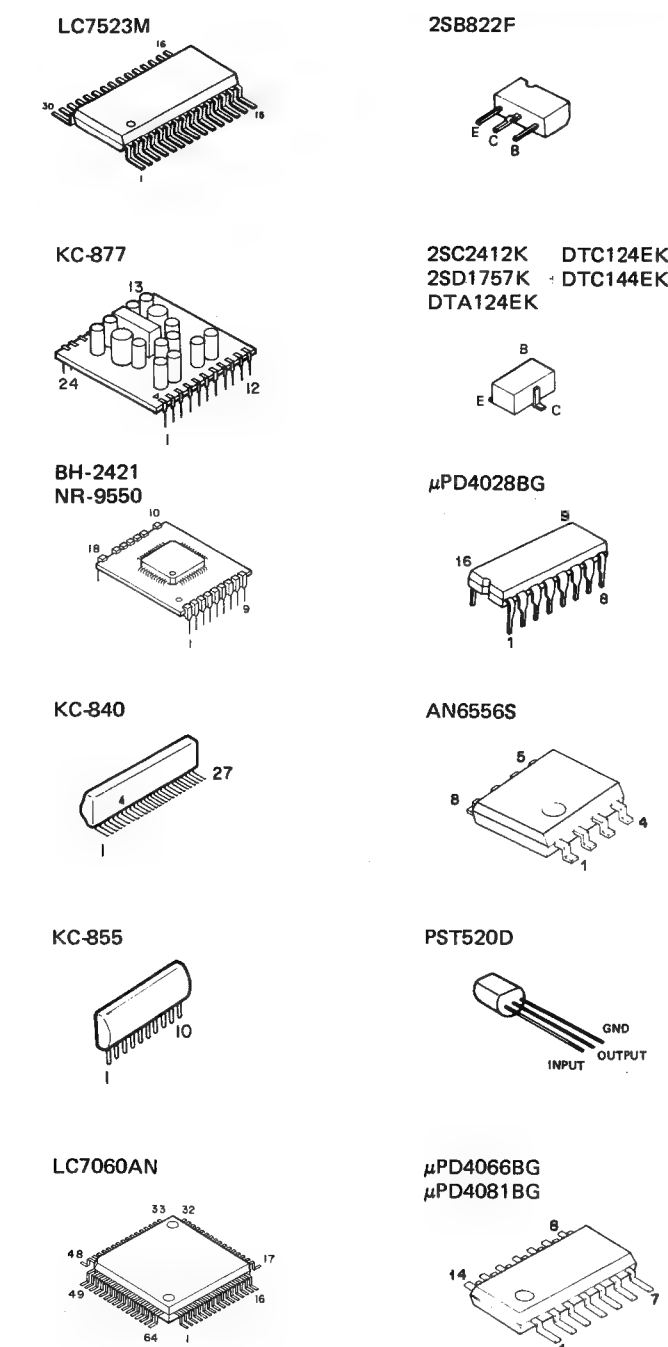
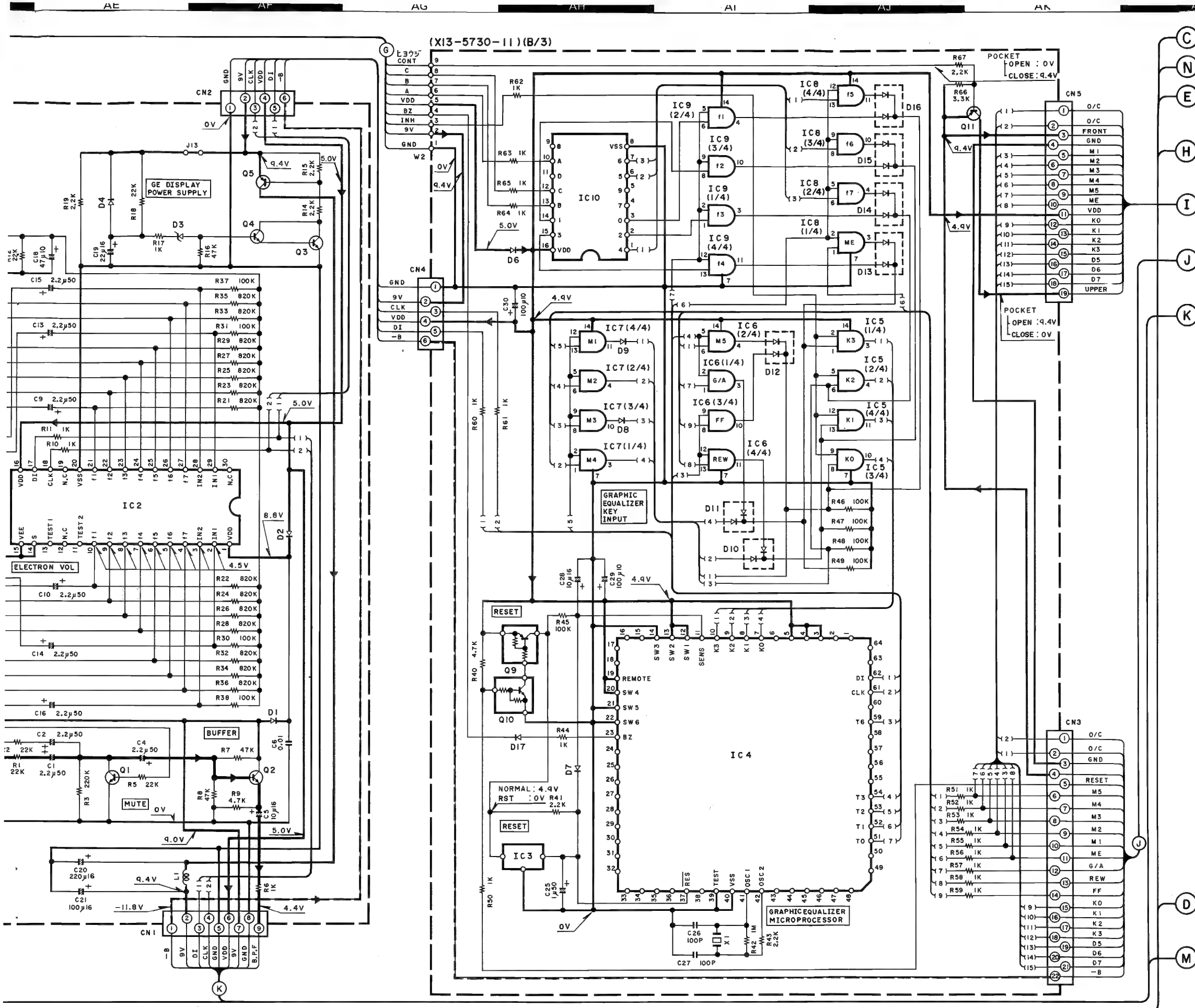
D1,2,4,6~9,17 : RLS-73  
 D3 : RLZJ4.7  
 D10~16 : DAN202K

SIGNAL LINE  
 GND LINE  
 +B LINE  
 -B LINE

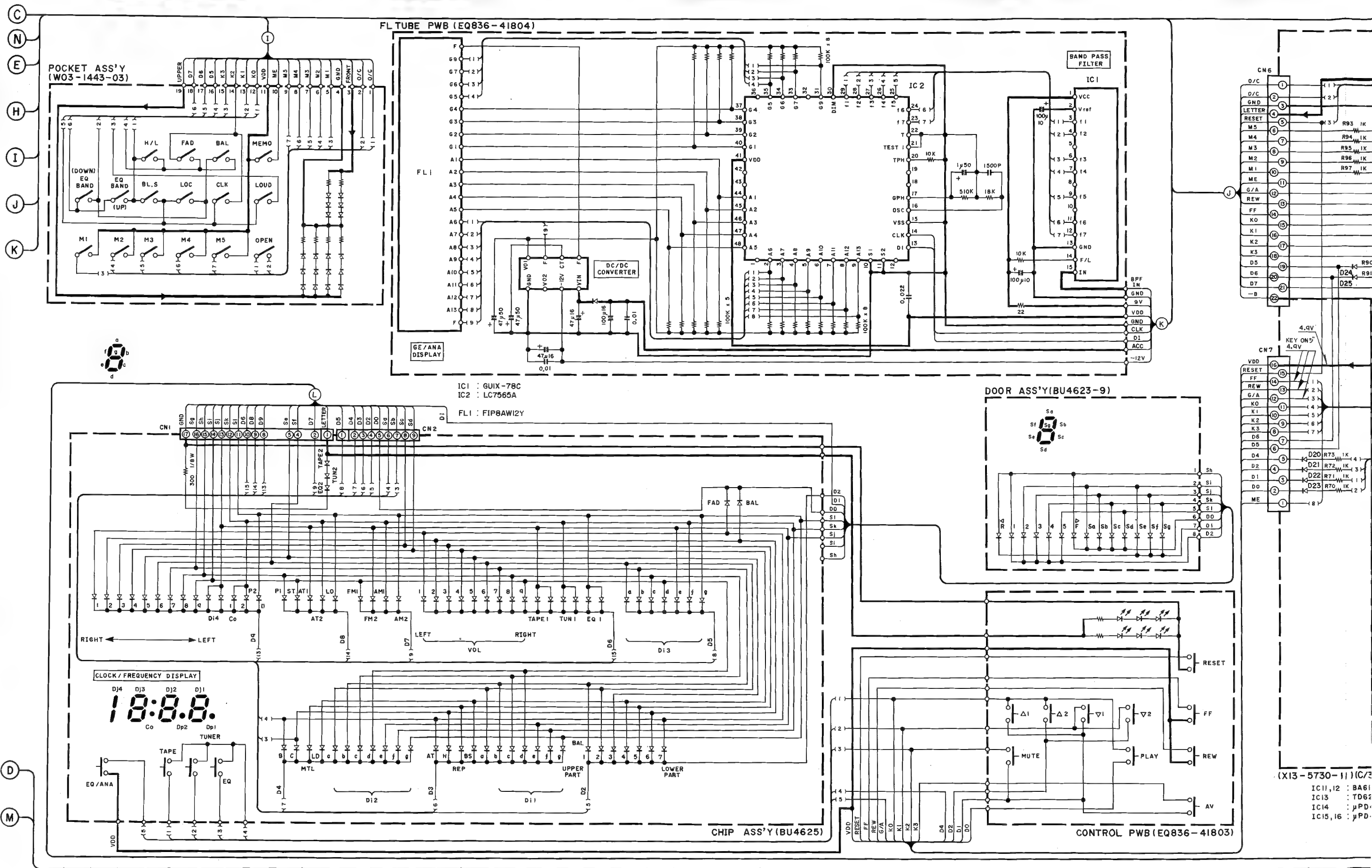


(X13-5730-11)(A/3)

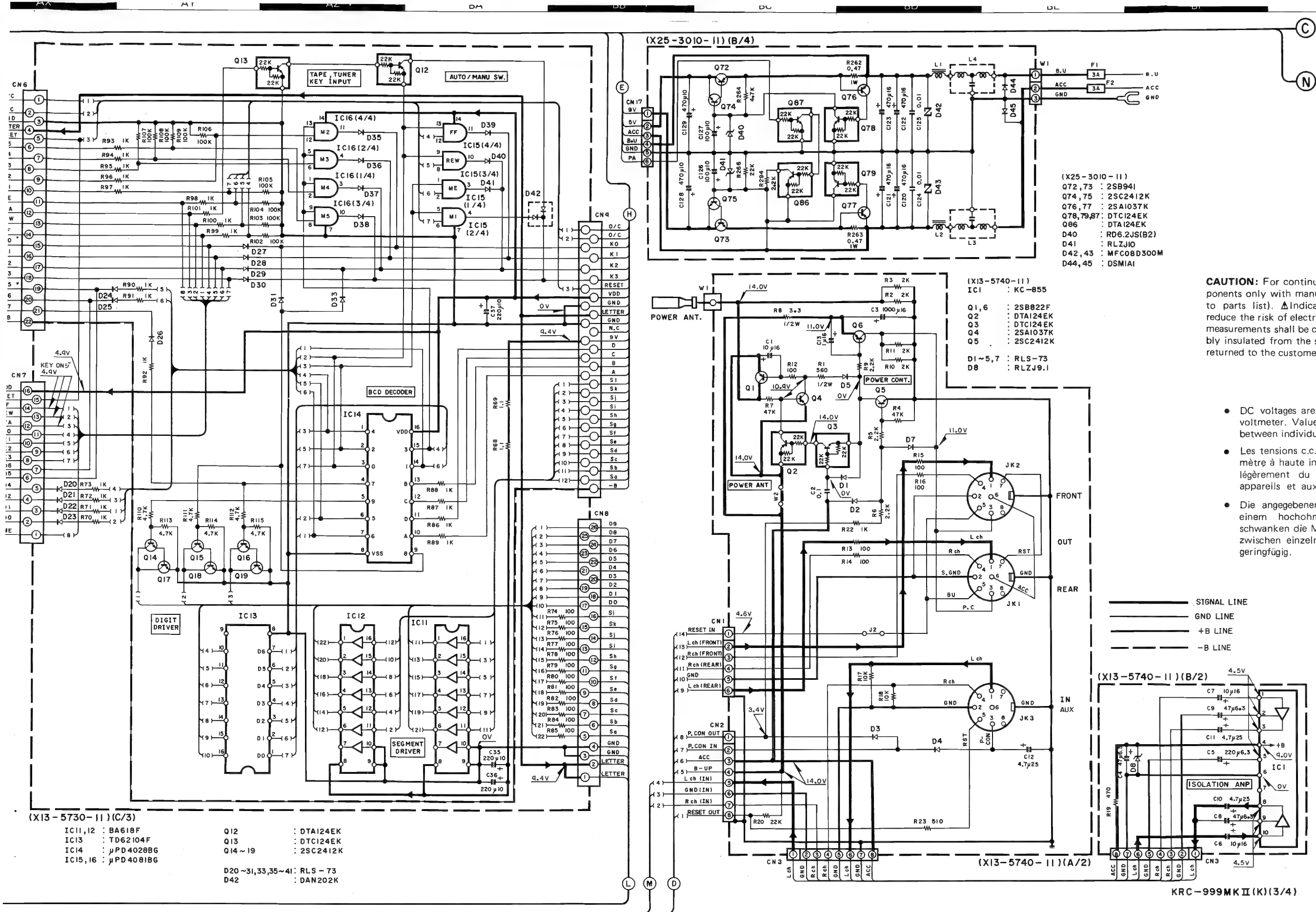
DC voltages are as measured with voltmeter. Values may vary slightly between individual instruments



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

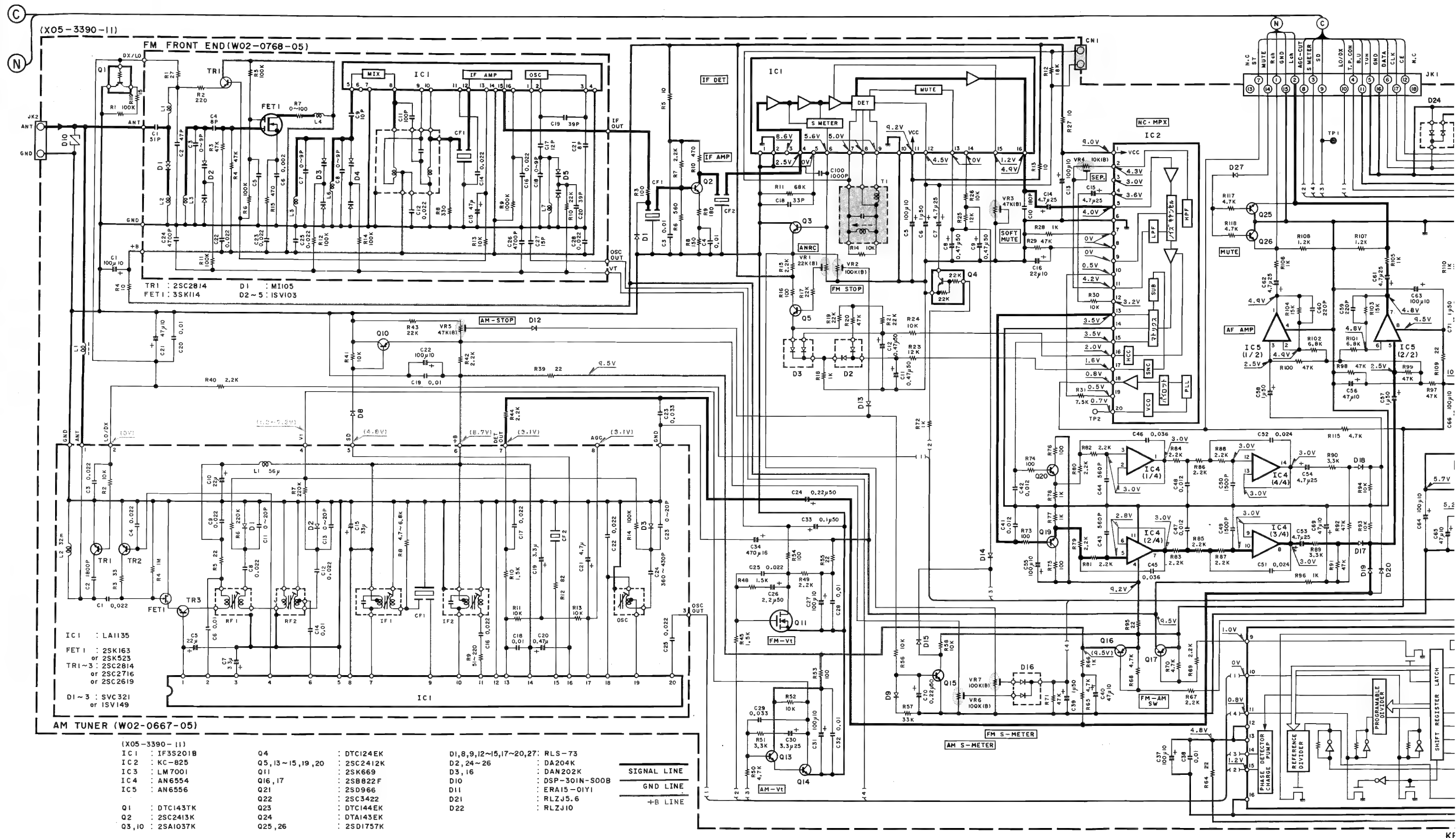


(X13-5730-11) (C/3)  
 IC11,12 : BA61  
 IC13 : TD62  
 IC14 :  $\mu$ PD  
 IC15,16 :  $\mu$ PD

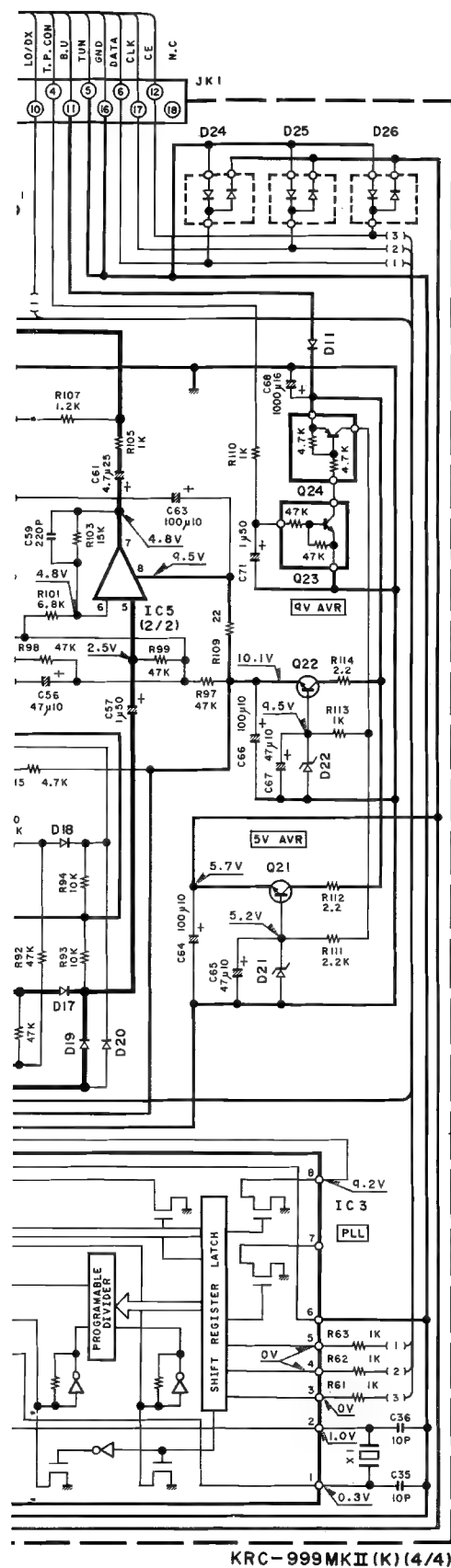


**KRC-999II**  
**KENWOOD**

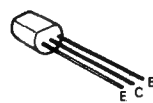




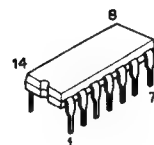
## EXPLODED VIEW (MECHANISM)



2SD966



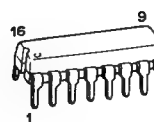
AN6554



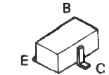
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DTC143TK



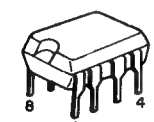
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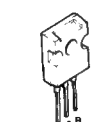
2SA1037K DTA143EK  
2SC2412K DTC124EK  
2SC2413K DTC144EK  
2SD1757K



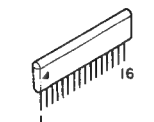
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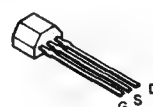
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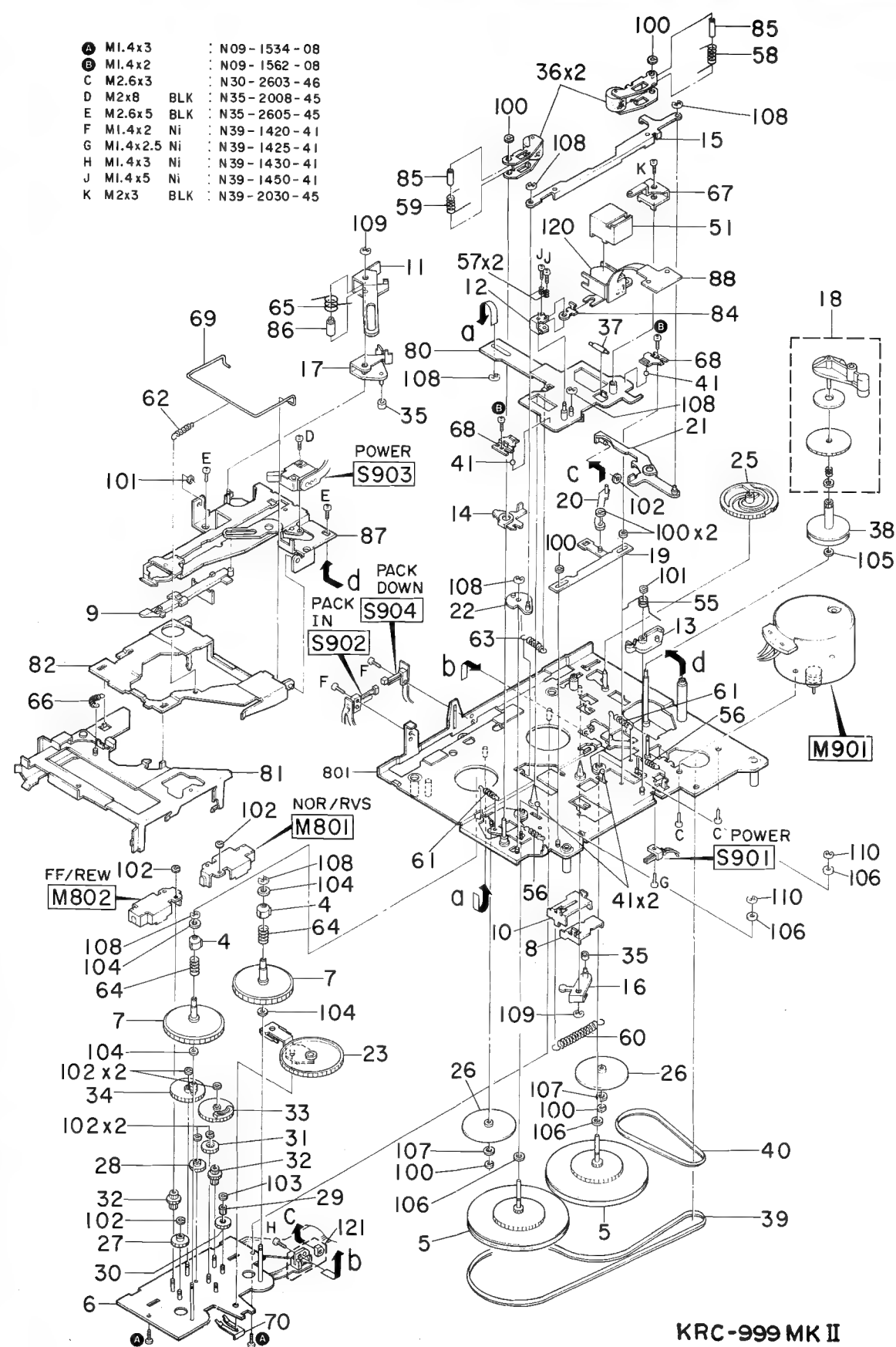
IF3S201B



2SK669



KC-825



angegebenen Gleichspannungswerte wurden mit m hochohmigen Voltmeter gemessen. Dabei vanden die Meßwerte aufgrund von Unterschieden schen einzelnen instrumenten oder Geräten u.U. ngfügig.

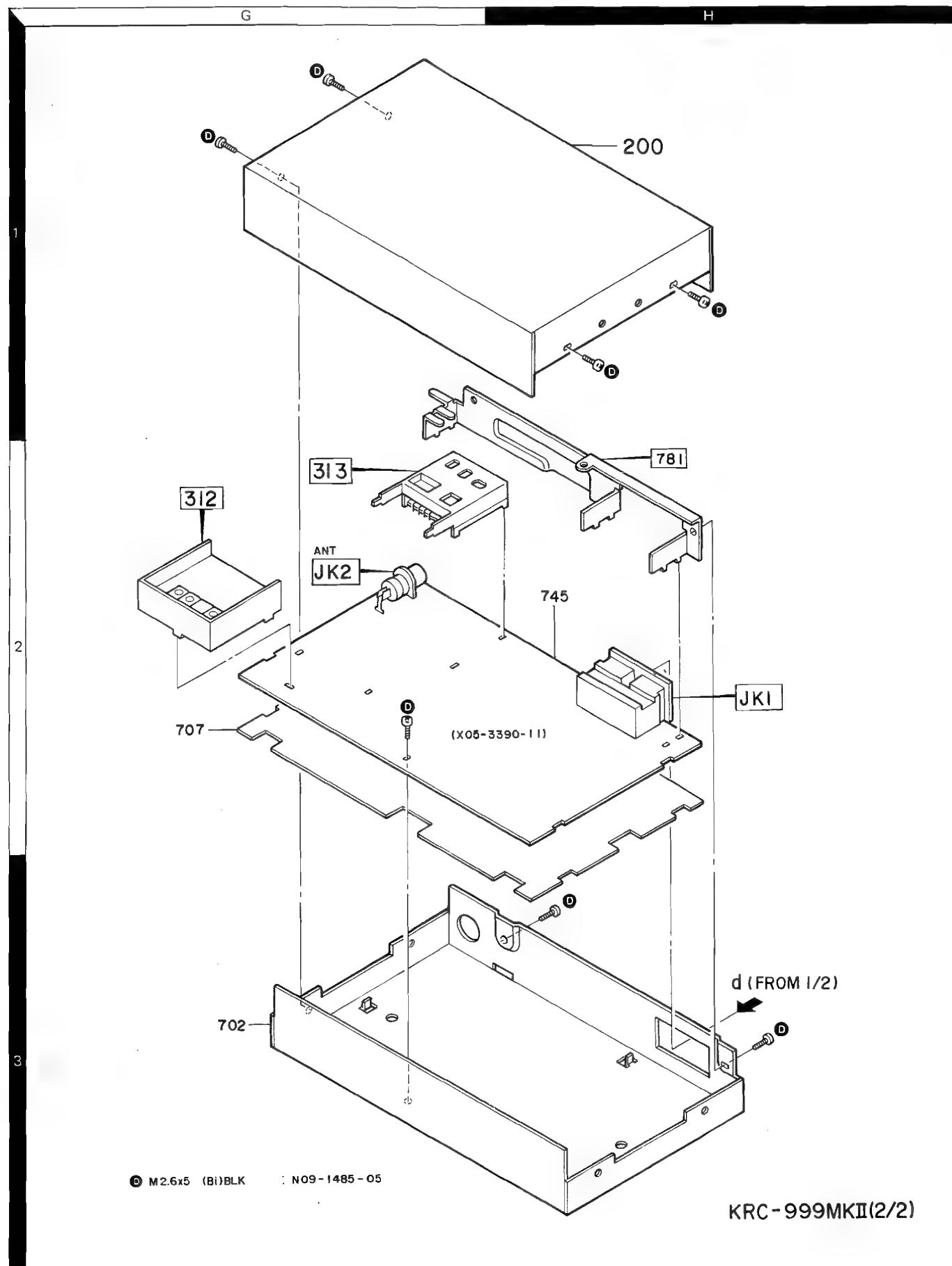
KRC-999II  
KENWOOD

82 Parts with the exploded numbers larger than 700 are not supplied.



# KRC-999II KRC-999II

## EXPLODED VIEW (UNIT)



KRC-999MKII(2/2)

Parts with the exploded numbers larger than 700 are not supplied.

## PARTS LIST

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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
KRC-999II						
200	1H		A01-1571-03	METALLIC CABINET		
201	2E		A01-1453-13	METALLIC CABINET(ELECTRIC UNIT)		
202	2D		A01-1569-03	METALLIC CABINET(ELECTRIC UNIT)		
203	1C	*	A01-1576-02	METALLIC CABINET(TUNER)		
204	3C	*	A20-5295-05	PANEL ASSY		
205	3E		A10-0851-13	CHASSIS (ELECTRIC UNIT)		
207	1D		B01-0373-03	PANEL ESCUTCHEON		
-			B46-0100-10	WARRANTY CARD		K
-			B46-0118-03	QUESTIONNAIRE CARD		
-			B50-6914-10	INSTRUCTION MANUAL(ENG,FRE)		
-			B58-0377-04	CAUTION CARD		
-			B58-0846-14	CAUTION CARD		M
-		*	B58-0865-04	CAUTION CARD		
01	2		CE04CWOJ470M	ELECTRO 47UF 6.3WV		
03			CE04KW1C222M	ELECTRO 2200UF 16WV		
209	3E		D10-1933-04	ARM (PLUNGER)		
210	3E		D10-1934-03	LEVER (PLUNGER)		
211	3F		D13-0260-04	LACK (GEAR)		
212	2F		D13-0264-04	GEAR (D19-0072-04ASY)		
213	2F		D13-0265-04	GEAR		
214	2F		D19-0072-04	CLUTCH ASSY		
215	2F		D40-0355-03	DRIVE MECHANISM ASSY		
216	2F		D90-0026-05	STEEL BALL (3/32)		
219	2D		D40-0341-05	CASSETTE MECHANISM ASSY		
220	1A		E30-2260-15	CORD WITH PLUG (ANT)		
221	1D		E30-0893-05	GROUND WIRE		K
222	3F		E30-2326-05	CORD WITH CONNECTOR		
223	3F		E30-2325-05	CORD WITH CONNECTOR		
224	3F		E30-2324-05	CORD WITH PLUG		
227	3E		G01-2049-04	COMPRESSION SPRING(PLUNGER)		
228	2F		G02-0200-14	FLAT SPRING		
231	1D		H30-0051-05	MAGIC TAPE		
-		*	H01-7625-04	ITEM CARTON CASE		
-		*	H03-0935-04	OUTER CARTON CASE		
-		*	H10-3450-02	POLYSTYRENE FOAMED FIXTURE(B)		
-		*	H10-3451-02	POLYSTYRENE FOAMED FIXTURE(T)		
-		*	H12-1176-04	PACKING FIXTURE		
-			H25-0002-03	PROTECTION BAG (100X250)		
-			H25-0112-04	PROTECTION BAG (180X250X0.05)		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0268-04	PROTECTION BAG		
232	3E		J19-2823-04	HOLDER (CONDENSER MICROPHONE)		
233	2F		J21-3622-04	MOUNTING HARDWARE		
234	1F		J25-5639-04	PRINTED WIRING BOARD(FPC)		
235	2F, 3F		J31-0249-04	COLLAR		
236	1D		J54-0068-03	STAY		
237	1D		J21-3732-05	MOUNTING HARDWARE		
238	2D		J21-3644-22	MOUNTING HARDWARE ASSY		
239	1D		J21-3645-04	MOUNTING HARDWARE		
240	1D		J21-3801-04	MOUNTING HARDWARE		
-			J61-0067-05	WIRE BAND		

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241	2F		N19-0375-04	FLAT WASHER		
242	1D	*	N99-0248-15	SCREW SET		
243	1C		N99-0212-25	SCREW SET		
244	3E, 2F		N19-0374-04	FLAT WASHER		
C	3F		N09-1472-05	TAPTITE SCREW (Ø1.7X5)		
E.	1F, 2F		N09-1527-05	TAPTITE SCREW (M2X4)		
F	3D		N09-1684-05	TAPTITE SCREW (M2.6X10)		
G	3F		N09-1822-05	STEPPED SCREW (Ø2X3.5)		
U	3D		N09-1577-05	TAPTITE SCREW (M2.6X6) SB		
V	2F		N09-1296-05	MACHINE SCREW (M1.7X6)		
W	1F		N09-1337-05	TAPTITE SCREW (Ø3X5)		
Y	2F		N09-1340-15	MACHINE SCREW (M2X4)		
Z	2E, 1F		N09-1414-05	TAPTITE SCREW (M2.6X5)		
S1, 2	2F	*	S46-1076-05	LEAF SWITCH (OPEN/CLOSE)		
246	1F		T42-0067-14	MOTOR ASSY		
247	3E		T91-0036-05	ELECTROSTATIC MICROPHONE		
248	3F		T94-0098-15	MAGNETIC PLUNGER		
BZ1	1D		T95-0032-05	PIEZOELECTRIC VIBRATOR		
FL1	2D		FIP8AW12Y	FLUORESCENT INDICATOR TUBE		
251	1C	*	W03-1440-05	REMOTE CONTROLLER		
252	2E	*	W03-1444-05	SWITCH BOX		
PANEL ASS'Y (A20-5295-05)						
266	2D	*	B38-0095-08	LED DISPLAY ASSY		
267	2D	*	B11-0173-08	FILTER (PINK)		
268	2D	*	B38-0094-08	LED DNR ASSY		
269	3D	*	B01-0376-05	PANEL ESCUTCHEON ASSY		
270	3C	*	B10-0916-08	FRONT GLASS		
272	2C		D21-1418-08	EXTENSION SHAFT		
275	3C		G11-1240-08	CUSHION		
276	3C		G01-2124-08	COMPRESSION SPRING(AUTO VOL)		
277	2D		G01-2125-08	TORSION COIL SPRING(DNR)		
278	2D		J25-5767-08	PRINTED WIRING BOARD (FPC4)		
279	2D		J25-5753-08	PRINTED WIRING BOARD (FPC1)		
280	2E		J25-5754-08	PRINTED WIRING BOARD (FPC2)		
281	2D		J25-5755-08	PRINTED WIRING BOARD (FPC3)		
282	2D		J21-5120-08	MOUNTING HARDWARE		
288	2C		K27-1827-08	KNOB(BUTTON) RESET		
291	3C		K27-1830-08	KNOB(BUTTON) AUTO VOL		
292	3C		K27-1831-08	KNOB(BUTTON) ATT		
293	3C		K27-1832-08	KNOB(BUTTON) DOWN		
294	3C		K27-1833-08	KNOB(BUTTON) UP		
295	3C		K27-1834-08	KNOB(BUTTON) PLAY/PRG		
A	2D		N09-1903-05	SCREW (Ø1.7X8)		
H	2D		N09-1889-05	SCREW (Ø1.7X5)		
J	2D		N09-1890-05	SCREW (Ø1.7X3.5)		
LED14	1D		B30-1202-05	LED(AY3432S) PLAY/PRG		
-			CE04CW1HR47M	ELECTR 0.47UF 50WV		
-			CE04DW1C470M	ELECTR 47UF 16WV		
-			CK73FF1H103K	CHIP C 0.010UF K		

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-			CK73FF1H152K	CHIP C 1500PF K		
-			CK73FF1H223K	CHIP C 0.022UF K		
-			C90-1263-05	ELECTR0 100UF 16WV		
-			C90-1263-05	ELECTR0 100UF 16WV		
-			RK73EB2B103J	CHIP R 10K J 1/8W		
-			RK73EB2B104J	CHIP R 100K J 1/8W		
-			RK73EB2B183J	CHIP R 18K J 1/8W		
-			RK73EB2B220J	CHIP R 22 J 1/8W		
-			RK73EB2B271J	CHIP R 270 J 1/8W		
-			RK73EB2B471J	CHIP R 470 J 1/8W		
-			RK73EB2B514J	CHIP R 510K J 1/8W		
SW1-4	3C		S40-1096-05	PUSH SWITCH(PRESET,UP,DOWN,AV)		
SW17-20	3C		S40-1114-05	PUSH SWITCH(PLAY,PR0G,ATT,FF)		
SW22-24	3C		S40-1114-05	PUSH SWITCH(REW,AUDIO CONTR0L)		
IC1			GU1X-78C	IC		
IC2			LC7565A	IC(GRAPHIC EQ FL DISPLAY DR)		
296	2D		W02-0792-05	D/D CONVERTER		
<b>SWITCH BOX (W03-1444-05)</b>						
301	2F	*	A02-1086-08	PLASTIC CABINET		
LED1-12	1E,1F		B30-1201-05	LED (AY1101P)		
LED1-6	2E		B30-1205-05	LED (AY1102P)		
302	2F		E29-0182-08	CONDUCTIVE RUBBER		
303	2F		J25-5758-08	PRINTED WIRING BOARD(FPC)		
305	2E		K27-1837-08	KN0B(BUTTON) 1		
306	2E		K27-1838-08	KN0B(BUTTON) 2		
307	2E		K27-1839-08	KN0B(BUTTON) 3		
308	2E		K27-1840-08	KN0B(BUTTON) 4		
309	2F		K27-1841-08	KN0B(BUTTON) 5		
310	2F		K27-1826-08	KN0B(BUTTON) 0PEN/CLOSE		
J	2E,2F		N09-1890-05	SCREW (Ø1.7X3.5)		
-			RD41DB2B271J	CYLND CHIP R 270 J 1/8W		
SW1-6	2E		S40-1096-05	PUSH SWITCH		
SW7-16	1E,1F		S40-1096-05	PUSH SWITCH		
<b>TUNER UNIT (X05-3390-11)</b>						
C1			CE04DW1A101M	ELECTR0 100UF 10WV		
C3,4			CK41DY1C103M	CYLND CHIP C 0.010UF M		
C5			CE04DW1A101M	ELECTR0 100UF 10WV		
C6			C90-0824-05	ELECTR0 1UF 50WV		
C7			C90-0482-05	ELECTR0 4.7UF 25WV		
C8			CE04DW1HR47M	ELECTR0 0.47UF 50WV		
C9			CE04DW1HR47M	ELECTR0 0.47UF 50WV		
C10			CK41DB1H181K	CYLND CHIP C 180PF K		
C11			CE04DW1HR47M	ELECTR0 0.47UF 50WV		
C12			CE04DW1HR47M	ELECTR0 0.47UF 50WV		
C13			CE04DW1A101M	ELECTR0 100UF 10WV		
C14,15			CE04DW1E4R7M	ELECTR0 4.7UF 25WV		
C16			CE04DW1A220M	ELECTR0 22UF 10WV		
C18			CC41DSL1H330J	CYLND CHIP C 33PF J		

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C19 ,20			CK41DY1C103M	CYLND CHIP C 0.010UF M		
C21			CE04DW1A470M	ELECTR0 47UF 10WV		
C22			CE04DW1A101M	ELECTR0 100UF 10WV		
C23			CK73EB1H333K	CHIP C 0.033UF K		
C24		*	CE04DW1HR22M	ELECTR0 0.22UF 50WV		
C25			CK41DF1E223Z	CYLND CHIP C 0.022UF Z		
C26			CE04DW1H2R2M	ELECTR0 2.2UF 50WV		
C27			CE04DW1A101M	ELECTR0 100UF 10WV		
C28			CK73FB1H103K	CHIP C 0.010UF K		
C29			CK73EB1H333K	CHIP C 0.033UF K		
C30			CE04DW1E3R3M	ELECTR0 3.3UF 25WV		
C31			CE04DW1A101M	ELECTR0 100UF 10WV		
C32			CK41DY1C103M	CYLND CHIP C 0.010UF M		
C33		*	CE04DW1HOR1M	ELECTR0 0.1UF 50WV		
C34			CE04DW1C471M	ELECTR0 470UF 16WV		
C35 ,36			CC41DSL1H100J	CYLND CHIP C 10PF J		
C37			CE04DW1A101M	ELECTR0 100UF 10WV		
C38			CK41DY1C103M	CYLND CHIP C 0.010UF M		
C39			CE04DW1H010M	ELECTR0 1.0UF 50WV		
C40			CE04DW1A470M	ELECTR0 47UF 10WV		
C41 ,42			CF92V1H123J	MF 0.012UF J		
C43 ,44			CK41DB1H561K	CYLND CHIP C 560PF K		
C45 ,46			CF92V1H363J	MF 0.036UF J		
C47 ,48			CF92V1H123J	MF 0.012UF J		
C49 ,50			CF92V1H152J	MF 1500PF J		
C51 ,52			CF92V1H243J	MF 0.024UF J		
C53 ,54			CE04DW1E4R7M	ELECTR0 4.7UF 25WV		
C55			CE04DW1A101M	ELECTR0 100UF 10WV		
C56			CE04DW1A470M	ELECTR0 47UF 10WV		
C57 ,58			CE04DW1H010M	ELECTR0 1.0UF 50WV		
C59 ,60			CK41DB1H221K	CYLND CHIP C 220PF K		
C61 ,62			CE04DW1E4R7M	ELECTR0 4.7UF 25WV		
C63 ,64			CE04DW1A101M	ELECTR0 100UF 10WV		
C65			CE04DW1A470M	ELECTR0 47UF 10WV		
C66			CE04DW1A101M	ELECTR0 100UF 10WV		
C67			CE04DW1A470M	ELECTR0 47UF 10WV		
C68			CE04DW1C102M	ELECTR0 1000UF 16WV		
C69			CE04DW1A470M	ELECTR0 47UF 10WV		
C70		*	CE04DW1HR22M	ELECTR0 0.22UF 50WV		
C71			CE04DW1H010M	ELECTR0 1.0UF 50WV		
C100			CK73FB1H102K	CHIP C 1000PF K		
JK1	2H	*	E08-1803-05	RECTANGULAR RECEPTACLE		
JK2	2G	*	E04-0018-05	RF COAXIAL CABLE RECEPTACLE		
CF1 ,2			L72-0523-05	CERAMIC FILTER		
L1			L39-0129-05	TRAP COIL		
T1			L30-0462-15	FM IFT		
X1			L77-1110-05	CRYSTAL RESONATOR(7.2MHZ)		
D	1C,3D		N09-1485-05	TAPTITE SCREW (M2.6X5)		
J1 -22			R92-0338-05	CLYND CHIP R 0 0HM		
J23 -33			R92-0670-05	CHIP R 0 0HM		
J34 ,35			R92-0338-05	CLYND CHIP R 0 0HM		
J37			R92-0338-05	CLYND CHIP R 0 0HM		
R1			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		

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R3			RD41DB2B101J	CYLND CHIP R 100	J 1/8W	
R4	.5		RD41DB2B100J	CYLND CHIP R 10	J 1/8W	
R6			RK73FB2A561J	CHIP R 560	J 1/10W	
R7			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R8			RD41DB2B151J	CYLND CHIP R 150	J 1/8W	
R9			RD41DB2B181J	CYLND CHIP R 180	J 1/8W	
R10			RD41DB2B471J	CYLND CHIP R 470	J 1/8W	
R11			RK73FB2A683J	CHIP R 68K	J 1/10W	
R12			RK73FB2A183J	CHIP R 18K	J 1/10W	
R13			RK73FB2A100J	CHIP R 10	J 1/10W	
R14			RK73FB2A103J	CHIP R 10K	J 1/10W	
R15			RK73FB2A222J	CHIP R 2.2K	J 1/10W	
R16			RK73FB2A101J	CHIP R 100	J 1/10W	
R17			RK73FB2A223J	CHIP R 22K	J 1/10W	
R18			RK73FB2A102J	CHIP R 1.0K	J 1/10W	
R19			RK73FB2A223J	CHIP R 22K	J 1/10W	
R20			RK73FB2A473J	CHIP R 47K	J 1/10W	
R21			RK73FB2A223J	CHIP R 22K	J 1/10W	
R23			RD41DB2B123J	CYLND CHIP R 12K	J 1/8W	
R24			RD41DB2B103J	CYLND CHIP R 10K	J 1/8W	
R25			RK73FB2A123J	CHIP R 12K	J 1/10W	
R26			RK73FB2A103J	CHIP R 10K	J 1/10W	
R27			RD41DB2B100J	CYLND CHIP R 10	J 1/8W	
R28			RK73FB2A102J	CHIP R 1.0K	J 1/10W	
R29			RK73FB2A473J	CHIP R 47K	J 1/10W	
R30			RK73FB2A103J	CHIP R 10K	J 1/10W	
R31			RD41DB2B752J	CYLND CHIP R 7.5K	J 1/8W	
R39			RD41DB2B220J	CYLND CHIP R 22	J 1/8W	
R40			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R41			RD41DB2B103J	CYLND CHIP R 10K	J 1/8W	
R42			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R43			RD41DB2B223J	CYLND CHIP R 22K	J 1/8W	
R44			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R45			RD41DB2B152J	CYLND CHIP R 1.5K	J 1/8W	
R48			RD41DB2B152J	CYLND CHIP R 1.5K	J 1/8W	
R49			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R50			RD41DB2B472J	CYLND CHIP R 4.7K	J 1/8W	
R51			RD41DB2B332J	CYLND CHIP R 3.3K	J 1/8W	
R52			RD41DB2B103J	CYLND CHIP R 10K	J 1/8W	
R53	.54		RD41DB2B101J	CYLND CHIP R 100	J 1/8W	
R55			RD41DB2B220J	CYLND CHIP R 22	J 1/8W	
R56			RD41DB2B103J	CYLND CHIP R 10K	J 1/8W	
R57			RD41DB2B333J	CYLND CHIP R 33K	J 1/8W	
R58			RD41DB2B103J	CYLND CHIP R 10K	J 1/8W	
R61	-63		RD41DB2B102J	CYLND CHIP R 1.0K	J 1/8W	
R64			RD41DB2B220J	CYLND CHIP R 22	J 1/8W	
R65			RD41DB2B472J	CYLND CHIP R 4.7K	J 1/8W	
R66			RD41DB2B102J	CYLND CHIP R 1.0K	J 1/8W	
R67			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R68			RD41DB2B472J	CYLND CHIP R 4.7K	J 1/8W	
R69			RD41DB2B222J	CYLND CHIP R 2.2K	J 1/8W	
R70			RD41DB2B472J	CYLND CHIP R 4.7K	J 1/8W	
R71			RD41DB2B473J	CYLND CHIP R 47K	J 1/8W	
R72			RD41DB2B102J	CYLND CHIP R 1.0K	J 1/8W	
R73	-76		RD41DB2B101J	CYLND CHIP R 100	J 1/8W	

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R77 ,78 R79 -88 R89 ,90 R91 ,92 R93 ,94			RD41DB2B102J RD41DB2B222J RD41DB2B332J RD41DB2B473J RD41DB2B103J	CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 2.2K J 1/8W CYLND CHIP R 3.3K J 1/8W CYLND CHIP R 47K J 1/8W CYLND CHIP R 10K J 1/8W		
R95 R96 R97 -100 R101,102 R103,104			RD41DB2B220J RD41DB2B102J RD41DB2B473J RD41DB2B682J RD41DB2B153J	CYLND CHIP R 22 J 1/8W CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 47K J 1/8W CYLND CHIP R 6.8K J 1/8W CYLND CHIP R 15K J 1/8W		
R105,106 R107,108 R109 R110 R111			RD41DB2B102J RD41DB2B122J RD41DB2B220J RD41DB2B102J RD41DB2B222J	CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 1.2K J 1/8W CYLND CHIP R 22 J 1/8W CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 2.2K J 1/8W		
R112 R113 R114 R115 R117,118			RD41DB2B2R2J RD41DB2B102J RD41DB2B2R2J RD41DB2B472J RD41DB2B472J	CYLND CHIP R 2.2 J 1/8W CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 2.2 J 1/8W CYLND CHIP R 4.7K J 1/8W CYLND CHIP R 4.7K J 1/8W		
R119 VR1 VR2 VR3 VR4		*	RK73FB2A150J R12-3072-05 R12-5044-05 R12-3099-05 R12-3096-05	CHIP R 15 J 1/10W TRIMMING PNT. (22K)ANRC TRIMMING PNT. (100K)FM STOP TRIMMING PNT. (47K)SOFT MUTE TRIMMING PNT. (10K)SEPARATION		
VR5 VR6 ,7			R12-3099-05 R12-5046-05	TRIMMING PNT. (47K)AM STOP TRIMMING PNT. (100K)S-METER		
D1 D2 D3 D8 ,9 D10			RLS-73 DA204K DAN202K RLS-73 DSP-301N-S00B	DIODE DIODE DIODE DIODE SURGE ABSORBER		
D11 D12 -15 D16 D17 -20 D21			ERA15-01Y1 RLS-73 DAN202K RLS-73 RLZJ5.6	DIODE DIODE DIODE DIODE ZENER DIODE		
D22 D24 -26 D27 IC1 IC2			RLZJ10 DA204K RLS-73 IF3S201B KC-825	ZENER DIODE DIODE DIODE IC(FM IF AMP/ DET)/ MPX) IC(NOISE CANCELLER/ MPX)		
IC3 IC4 IC5 Q1 Q2		*	LM7001 AN6554 AN6556 DTC143TK 2SC2413K	IC(PLL FREQUENCY SYNTHESIZER) IC(OP AMP X4) IC(OP AMP X2) DIGITAL TRANSISTOR TRANSISTOR		
Q3 Q4 Q5 Q10 Q11		*	2SA1037K DTC124EK 2SC2412K 2SA1037K 2SK669	TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR FET		
Q13 -15 Q16 ,17			2SC2412K 2SB822F	TRANSISTOR TRANSISTOR		

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Q19 ,20 Q21 Q22 Q23 Q24			2SC2412K 2SD966 2SC3422 DTC144EK DTA143EK	TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q25 ,26			2SD1757K	TRANSISTOR		
312 313	2G 2G		W02-0667-05 W02-0768-05	TUNER ASSY FM FRONT-END ASSY		
SUB-CIRCUIT UNIT (X13-5730-11)						
314	3D		A10-0995-03	CHASSIS		
C1 ,2 C4 C5 C6 C7 ,8			CE04CW1H2R2M CE04CW1H2R2M CE04CW1C100M CK73FB1H103K CE04MW1E4R7M	ELECTRO 2.2UF 50WV ELECTRO 2.2UF 50WV ELECTRO 10UF 16WV CHIP C 0.010UF K ELECTRO 4.7UF 25WV		
C9 ,10 C11 ,12 C13 -16 C17 C18		*	CE04CW1H2R2M CK41DB1H101K CE04MW1H2R2M CE04CW1A470M CE04DW1A470M	ELECTRO 2.2UF 50WV CYLND CHIP C 100PF K ELECTRO 2.2UF 50WV ELECTRO 47UF 10WV ELECTRO 47UF 10WV		
C19 C20 C21 C22 C25			CE04CW1C220M CE04DW1C221M C90-1263-05 CE04DW1A221M CE04CW1H010M	ELECTRO 22UF 16WV ELECTRO 220UF 16WV ELECTRO 100UF 16WV ELECTRO 220UF 10WV ELECTRO 1.0UF 50WV		
C26 ,27 C28 C29 ,30 C35 -37			CK41DB1H101K CE04CW1C100M CE04DW1A101M CE04DW1A221M	CYLND CHIP C 100PF K ELECTRO 10UF 16WV ELECTRO 100UF 10WV ELECTRO 220UF 10WV		
CN1 CN2 CN3 CN4 CNS		*	E10-0905-05 E40-3520-05 E40-3528-05 E40-3540-05 E10-1906-05	FLAT CABLE CONNECTOR PIN ASSY PIN ASSY SOCKET FOR PIN ASSY FLAT CABLE CONNECTOR		
CN6 CN7 CN8 CN9 W1		*	E40-3548-05 E10-1606-05 E10-2606-05 E10-3006-05 E31-4064-05	SOCKET FOR PIN ASSY FLAT CABLE CONNECTOR FLAT CABLE CONNECTOR FLAT CABLE CONNECTOR WIRING HARNESS		
W2		*	E31-4063-05	WIRING HARNESS		
L1 X1			L39-0136-15 L78-0202-05	TRAP COIL RESONATOR (400KHZ)		
J1 J2 -4 J5 -7 J8 J9 -11			R92-0338-05 R92-0670-05 R92-0338-05 R92-0670-05 R92-0338-05	CYLND CHIP R 0 OHM CHIP R 0 OHM CYLND CHIP R 0 OHM CHIP R 0 OHM CYLND CHIP R 0 OHM		
J12 ,13 J15 -19 J20 J22 J33			R92-0670-05 R92-0338-05 R92-0670-05 R92-0338-05 R92-0338-05	CHIP R 0 OHM CYLND CHIP R 0 OHM CHIP R 0 OHM CYLND CHIP R 0 OHM CYLND CHIP R 0 OHM	K	

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R1 ,2			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R3			RD41DB2B224J	CYLND CHIP R 220K J 1/8W		
R5			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R6			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R7 ,8			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R9			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R10 ,11			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R12 ,13			RK73FB2A223J	CHIP R 22K J 1/10W		
R14 ,15			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R16			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R17			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R18			RK73FB2A223J	CHIP R 22K J 1/10W		
R19			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R21			RD41DB2B824J	CYLND CHIP R 820K J 1/8W		
R22			RK73FB2A824J	CHIP R 820K J 1/10W		
R23 -26			RD41DB2B824J	CYLND CHIP R 820K J 1/8W		
R27 -29			RK73FB2A824J	CHIP R 820K J 1/10W		
R30			RK73FB2A104J	CHIP R 100K J 1/10W		
R31			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R32 ,33			RD41DB2B824J	CYLND CHIP R 820K J 1/8W		
R34			RK73FB2A824J	CHIP R 820K J 1/10W		
R35			RD41DB2B824J	CYLND CHIP R 820K J 1/8W		
R36			RK73FB2A824J	CHIP R 820K J 1/10W		
R37			RK73FB2A104J	CHIP R 100K J 1/10W		
R38			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R40			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R41			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R42			RD41DB2B105J	CYLND CHIP R 1.0M J 1/8W		
R43			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R44			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R45 -49			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R50			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R51 -61			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R62			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R63 -65			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R66			RD41DB2B332J	CYLND CHIP R 3.3K J 1/8W		
R67			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R68 ,69		*	RD41DB2B1R1J	CYLND CHIP R 1.1 J 1/8W		
R70 -73			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R74 -85			RD41DB2B101J	CYLND CHIP R 100 J 1/8W		
R86 -95			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R96			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R97			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R98			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R99 -101			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R102-109			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R110-113			RD41DB2B472J	CYLND CHIP R 4.7K J 1/8W		
R114			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R115			RD41DB2B472J	CYLND CHIP R 4.7K J 1/8W		
D1 ,2			RLS-73	DIODE		
D3			RLZJ4.7	ZENER DIODE		
D4			RLS-73	DIODE		
D6 -9			RLS-73	DIODE		
D10 -16			DAN202K	DIODE		

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D17 D20 -31 D33 D34 -41 D35 -41			RLS-73 RLS-73 RLS-73 RLS-73 RLS-73	DIODE DIODE DIODE DIODE DIODE	K M K	
D42 IC1 IC2 IC3 IC4			DAN202K KC-840 * LC7523M PST520D * LC7060AN	DIODE IC (GRAPHIC EQUALIZER) IC (7CH GRAPHIC EQUALIZER) IC (LOW POWER RESET) IC (GRAPHIC EQUALIZER)		
IC5 -9 IC10 IC11,12 IC13 IC14			UPD4081BG UPD4028BG BA618F * TD62104F UPD4028BG	IC (AND X4) IC (BCD-T0-DECIMAL DECODER) IC (LED SEGMENT DRIVER) IC (DARLINGTON DRIVER) IC (BCD-T0-DECIMAL DECODER)		
IC15,16 Q1 -4 Q5 Q9 Q10			UPD4081BG 2SC2412K 2SB822F DTA124EK DTC124EK	IC (AND X4) TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q11 Q12 Q13 Q14 -19			2SB822F DTA124EK DTC124EK 2SC2412K	TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR		
SUB-CIRCUIT UNIT (X13-5740-11)						
314	3D	*	A10-0995-03	CHASSIS		
C1 C2 C3 C4 C5		*	C90-0478-05 CF92V1H104J CE04DW1C102M * CE04MW0J470M C90-1408-05	ELECTR 10UF 16WV MF 0.10UF J ELECTR 1000UF 16WV ELECTR 47UF 6.3WV ELECTR 220UF 6.3WV		
C6 ,7 C8 ,9 C10 ,11 C12 C13		*	CE04MW1C100M * CE04MW0J470M CE04MW1E4R7M C90-0482-05 C92-0004-05	ELECTR 10UF 16WV ELECTR 47UF 6.3WV ELECTR 4.7UF 25WV ELECTR 4.7UF 25WV CHIP TAN 1UF 16WV		
CN1 CN2 CN3 JK1 ,2 JK3		*	E40-3250-05 E40-3252-05 * E40-3395-05 * E06-0814-05 * E06-0813-05	PIN ASSY PIN ASSY PIN ASSY CYLINDRICAL RECEPTACLE (PUSH) REC/PLAY JACK (TUNER INPUT)		
W1 W2	3D	*	E30-2241-05 E31-3574-05	DC CORD WIRING HARNESS		
D	3D		N09-1485-05	TAPTITE SCREW (M2.6X5)		
J2 J9 ,10 J11 -13 J14 J15 ,16			R92-0670-05 R92-0338-05 R92-0670-05 R92-0338-05 R92-0670-05	CHIP R 0 OHM CLYND CHIP R 0 OHM CHIP R 0 OHM CLYND CHIP R 0 OHM CHIP R 0 OHM		
J18 J19 -22 J23 J24 -28			R92-0670-05 R92-0338-05 R92-0670-05 R92-0338-05	CHIP R 0 OHM CLYND CHIP R 0 OHM CHIP R 0 OHM CLYND CHIP R 0 OHM		

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J33 R1 R2 ,3 R4 R5 ,6  R7 R8 R9 R10 ,11 R12  R13 ,14 R15 ,16 R17 ,18 R19 R20  R22 R23  D1 -5 D7 D8 IC1 Q1  Q2 Q3 Q4 Q5 Q6			R92-0338-05 RD14DB2H561J RD41DB2B202J RK73FB2A473J RK73FB2A222J  RK73FB2A473J RD14DB2H3R3J RK73FB2A222J RD41DB2B202J RK73FB2A101J  RD41DB2B101J RK73FB2A101J RK73FB2A103J RD41DB2B471J RK73FB2A223J  RK73FB2A102J RD41DB2B511J  RLS-73 RLS-73 RLZJ9.1 KC-855 2SB822F  DTA124EK DTC124EK 2SA1037K 2SC2412K 2SB822F	CLYND CHIP R 0.0HM SMALL-RD 560 J 1/2W CYLND CHIP R 2.0K J 1/8W CHIP R 47K J 1/10W CHIP R 2.2K J 1/10W  CHIP R 47K J 1/10W SMALL-RD 3.3 J 1/2W CHIP R 2.2K J 1/10W CYLND CHIP R 2.0K J 1/8W CHIP R 100 J 1/10W  CYLND CHIP R 100 J 1/8W CHIP R 100 J 1/10W CHIP R 10K J 1/10W CYLND CHIP R 470 J 1/8W CHIP R 22K J 1/10W  CHIP R 1.0K J 1/10W CYLND CHIP R 510 J 1/8W  DIODE DIODE ZENER DIODE IC(ISOLATION AMP) TRANSISTOR  DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
DOLBY NOISE REDUCTION UNIT (X14-2190-11)						
C1 ,2 C3 C5 ,6 C7 ,8 C9 ,10  C11 ,12 C13 ,14 C15 ,16 C17 ,18 C19 ,20  C21 C23 -26 C27 C30 C31 ,32  C33 C34 C35 ,36 C37 ,38  CN1 CN2 CN3 CN4 CN5  CN6			CE04MW1C100M CK41DY1C103M CE04MW1E4R7M CC41DSL1H6B0J CE04MW1C100M  CE04MW1H2R2M CE04MW1E4R7M CK41DB1H101K CE04MW1C100M CE04MW0J470M  C90-1408-05 CE04MW1E4R7M C90-1263-05 C90-1409-05 C90-1263-05  C90-0825-05 C90-1263-05 CK73FB1H392K CE04MW1E4R7M  E40-3465-05 E40-3467-05 E40-3247-05 E40-3250-05 E40-3253-05  E40-3248-05	ELECTOR 10UF 16WV CYLND CHIP C 0.010UF M ELECTOR 4.7UF 25WV CYLND CHIP C 68PF J ELECTOR 10UF 16WV  ELECTOR 2.2UF 50WV ELECTOR 4.7UF 25WV CYLND CHIP C 100PF K ELECTOR 10UF 16WV ELECTOR 47UF 6.3WV  ELECTOR 220UF 6.3WV ELECTOR 4.7UF 25WV ELECTOR 100UF 16WV ELECTOR 220UF 10WV ELECTOR 100UF 16WV  ELECTOR 22UF 16WV ELECTOR 100UF 16WV CHIP C 3900PF K ELECTOR 4.7UF 25WV  PIN ASSY PIN ASSY PIN ASSY PIN ASSY PIN ASSY  PIN ASSY		

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LH1			J19-2826-05	HOLDER		
J1			R92-0670-05	CHIP R 0 OHM		
J4 ,5			R92-0670-05	CHIP R 0 OHM		
J12			R92-0338-05	CLYND CHIP R 0 OHM		
R1 ,2			RK73FB2A223J	CHIP R 22K J 1/10W		
R3 ,4			RK73FB2A104J	CHIP R 100K J 1/10W		
R5 ,6			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R7 ,8			RK73FB2A223J	CHIP R 22K J 1/10W		
R9 ,10			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R11 ,12			RK73FB2A681J	CHIP R 680 J 1/10W		
R13 ,14			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R15 ,16		*	RK73FB2A751J	CHIP R 750 J 1/10W		
R17 ,18			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R19 ,20			RK73FB2A223J	CHIP R 22K J 1/10W		
R21 ,22			RK73FB2A391J	CHIP R 390 J 1/10W		
R23 ,24			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R25 ,26			RK73FB2A103J	CHIP R 10K J 1/10W		
R27 ,28			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R29 ,30			RK73FB2A511J	CHIP R 510 J 1/10W		
R31 ,32			RK73FB2A223J	CHIP R 22K J 1/10W		
R33 ,34			RK73FB2A511J	CHIP R 510 J 1/10W		
R35 -40			RK73FB2A223J	CHIP R 22K J 1/10W		
R46 -51			RK73FB2A223J	CHIP R 22K J 1/10W		
R52 ,53			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R54 ,55			RK73FB2A223J	CHIP R 22K J 1/10W		
R56 ,57			RK73FB2A473J	CHIP R 47K J 1/10W		
R58			RK73FB2A103J	CHIP R 10K J 1/10W		
R60			RK73FB2A121J	CHIP R 120 J 1/10W		
R61			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R62			RK73FB2A331J	CHIP R 330 J 1/10W		
R63 ,64			RK73FB2A103J	CHIP R 10K J 1/10W		
R65 ,66			RK73FB2A511J	CHIP R 510 J 1/10W		
R67 ,68			RK73FB2A223J	CHIP R 22K J 1/10W		
R69 ,70		*	RK73FB2A162J	CHIP R 1.6K J 1/10W		
VR1 ,2			R12-3100-05	TRIMMING POT. (10K)PB LEVEL		
VR3			R12-1071-05	TRIMMING POT. (2.2K) DBX		
D1			RLZJ5.1	ZENER DIODE		
D2			RLS-73	DIODE		
D3			RLZJ18	ZENER DIODE		
D4 ,5			DAN202K	DIODE		
D8 -10			RLS-73	DIODE		
IC1			AN6556S	IC(OP AMP X2)		
IC2		*	BH-2421	IC(DOLBY)		
IC2		*	NR-9550	IC(DOLBY)		
IC3		*	KC-877	IC(DBX)		
IC4			AN6556S	IC(OP AMP X2)		
IC5		*	KC-855	IC(ISOLATION AMP)		
IC6 ,7			UPD4066BG	IC(BILATERAL SWITCH X4)		
Q1 ,2			2SD1757K	TRANSISTOR		
Q3			DTC124EK	DIGITAL TRANSISTOR		
Q4			DTC144EK	DIGITAL TRANSISTOR		
Q5 ,6			DTC124EK	DIGITAL TRANSISTOR		
Q7			DTA124EK	DIGITAL TRANSISTOR		
Q8			DTC124EK	DIGITAL TRANSISTOR		

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Q9 Q10 Q11 Q12			DTA124EK DTC124EK DTA124EK DTC124EK	DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
<b>ELECTRIC UNIT (X25-3010-11)</b>						
C1 C2 C3 C4 C5 ,6		*	CC73FCH1H030C CC73FCH1H100D CE04CW1C4R7M CK73EB1H103K C92-0004-05	CHIP C 3.0PF C CHIP C 10PF D ELECTRO 4.7UF 16WV CHIP C 0.010UF K CHIP TAN 1UF 16WV		
C7 C8 ,9 C10 C11 C12			C92-0005-05 CC73FCH1H330J CK73EB1H223K C92-0009-05 CK73EB1H103K	CHIP-TAN 2.2UF 6.3WV CHIP C 33PF J CHIP C 0.022UF K CHIP TAN 4.7UF 10WV CHIP C 0.010UF K		
C13 -15 C16 ,17 C18 C19 C20			CE04CW1C100M CE04CW0J470M CK41DY1C103M CE04CW1A220M CE04CW1C100M	ELECTRO 10UF 16WV ELECTRO 47UF 6.3WV CYLND CHIP C 0.010UF M ELECTRO 22UF 10WV ELECTRO 10UF 16WV		
C21 C22 C23 C24 ,25 C26 ,27		*	CE04CW1A101M CE04MW1H010M CE04DW1A101M CK73EF1E104Z CK73FB1H102K	ELECTRO 100UF 10WV ELECTRO 1.0UF 50WV ELECTRO 100UF 10WV CHIP C 0.10UF Z CHIP C 1000PF K		
C28 ,29 C30 C31 C32 ,33 C34 ,35		*	C92-0004-05 CE04MW1H010M CE04CW1A101M CE04MW1E4R7M CK73FB1H102K	CHIP TAN 1UF 16WV ELECTRO 1.0UF 50WV ELECTRO 100UF 10WV ELECTRO 4.7UF 25WV CHIP C 1000PF K		
C36 ,37 C38 ,39 C44 ,45 C46 ,47 C48 ,49		*	CE04MW1C100M CE04MW1H010M CE04MW1E4R7M CC41DSL1H330J CK73EB1H473K	ELECTRO 10UF 16WV ELECTRO 1.0UF 50WV ELECTRO 4.7UF 25WV CYLND CHIP C 33PF J CHIP C 0.047UF K		
C50 -53 C54 -57 C58 -61 C62 -65 C66			CK41DX1C222M CE04MW1E4R7M CK73FB1H152K CE04MW1C100M CK73EB1H103K	CYLND CHIP C 2200PF M ELECTRO 4.7UF 25WV CHIP C 1500PF K ELECTRO 10UF 16WV CHIP C 0.010UF K		
C67 C68 C69 C70 C71			CK41DB1H102K C92-0002-05 CK73EB1E563K C92-0005-05 CE04CW1C100M	CYLND CHIP C 1000PF K CHIP TAN 0.22UF 35WV CHIP C 0.056UF K CHIP-TAN 2.2UF 6.3WV ELECTRO 10UF 16WV		
C72 C73 C74 ,75 C76 ,77 C80			C92-0003-05 CE04CW1A220M CE04DW1A221M CE04DW1C331M CE04CW1A330M	CHIP TAN 0.47UF 25WV ELECTRO 22UF 10WV ELECTRO 220UF 10WV ELECTRO 330UF 16WV ELECTRO 33UF 10WV		
C81 C82 C83 C84 C85			CE04CW1A220M CK73EB1H393K CE04CW1C100M CK41DB1H101K CE04CW1C100M	ELECTRO 22UF 10WV CHIP C 0.039UF K ELECTRO 10UF 16WV CYLND CHIP C 100PF K ELECTRO 10UF 16WV		

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C86			CE04CW1HR68M	ELECTR0 0.68UF 50WV		
C87			CE04CW1A220M	ELECTR0 22UF 10WV		
C88 ,89			CE04CW1C100M	ELECTR0 10UF 16WV		
C90 ,91			CK41DB1H101K	CYLND CHIP C 100PF K		
C92		*	CK73EF1E683Z	CHIP C 0.068UF Z		
C93			C90-1409-05	ELECTR0 220UF 10WV		
C94			CK41DB1H101K	CYLND CHIP C 100PF K		
C95			C90-1410-05	ELECTR0 330UF 6.3WV		
C96			CE04CW1C100M	ELECTR0 10UF 16WV		
C100			CE04DW1A101M	ELECTR0 100UF 10WV		
C101			CE04DW1C100M	ELECTR0 10UF 16WV		
C102,103			CF92V1H822J	MF 8200PF J		
C104,105			CE04DW1A470M	ELECTR0 47UF 10WV		
C106			CE04DW1C100M	ELECTR0 10UF 16WV		
C108-111			CO09FS1H821JZ5	POLYSTY 820PF J		
C120-123			CE04DW1C471M	ELECTR0 470UF 16WV		
C124,125			CK73EB1H103K	CHIP C 0.010UF K		
C126,127			CE04DW1A101M	ELECTR0 100UF 10WV		
C128,129			CE04DW1A471M	ELECTR0 470UF 10WV		
C130			CE04CW1C470M	ELECTR0 47UF 16WV		
C131			CE04CW1C220M	ELECTR0 22UF 16WV		
C303			C92-0009-05	CHIP TAN 4.7UF 10WV		
TC1			C05-0094-05	CERAMIC TRIMMER CAPACITOR(20PF		
CN1			E10-3006-05	FLAT CABLE CONNECTOR		
CN2			E10-0505-05	FLAT CABLE CONNECTOR		
CN3			E40-3253-05	PIN ASSY		
CN4			E10-2209-05	FLAT CABLE CONNECTOR		
CN6			E40-3237-05	PIN ASSY		
CN7			E40-3250-05	PIN ASSY		
CN8			E40-3256-05	PIN ASSY		
CN9		*	E40-3255-05	PIN ASSY		
CN10			E40-3246-05	PIN ASSY		
CN11			E40-3488-05	PIN ASSY		
CN13			E40-3486-05	PIN ASSY		
CN14			E40-0587-05	PIN ASSY		
CN15			E40-3250-05	PIN ASSY		
CN17			E40-3241-05	PIN ASSY		
CN18			E40-3166-05	PIN ASSY		
W1	3D	*	E30-2240-05	DC CORD		
W2		*	E31-4062-05	WIRING HARNESS		
W3	3D	*	E30-2242-05	CORD WITH PLUG		
W4		*	E31-4137-15	WIRING HARNESS		
W5			E31-3733-05	WIRING HARNESS		
F1 ,2			F06-3026-05	FUSE (3A)		
L1 ,2			L33-0310-05	CHOKE COIL		
L3 ,4			L79-0197-05	LC FILTER		
L5 ,6			L40-4791-17	SMALL FIXED INDUCTOR(4.7UH,K)		
X1			L77-1112-05	CRYSTAL RESONATOR(4.1943MHZ)		
X2			L78-0207-05	RESONATOR (4.194MHZ)		
J1 -37			R92-0338-05	CLYND CHIP R 0 0HM		
J52 -54			R92-0338-05	CLYND CHIP R 0 0HM		
J55			R92-0670-05	CHIP R 0 0HM		
J56			R92-0338-05	CLYND CHIP R 0 0HM		
J57			R92-0670-05	CHIP R 0 0HM		

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J58 ,59			R92-0338-05	CLYND CHIP R 0 8HM		
J60			R92-0670-05	CHIP R 0 8HM		
J61 -69			R92-0338-05	CLYND CHIP R 0 8HM		
J71			R92-0670-05	CHIP R 0 8HM		
J72			R92-0338-05	CLYND CHIP R 0 8HM		
J73			R92-0670-05	CHIP R 0 8HM		
J91			R92-0338-05	CLYND CHIP R 0 8HM		
R1 -20			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R21 -24			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R25 -27			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R30			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R31			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R32 ,33			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R34			RD41DB2B101J	CYLND CHIP R 100 J 1/8W		
R35 -37			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R38			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R39 -46			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R48			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R51 -53			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R54			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R55			RK73FB2A223J	CHIP R 22K J 1/10W		
R57			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R58			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R59			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R60			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R61			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R62			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R65 -67			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R68 -70			RD41DB2B101J	CYLND CHIP R 100 J 1/8W		
R72			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R73			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R74 -77			RD41DB2B472J	CYLND CHIP R 4.7K J 1/8W		
R79			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R80			RD41DB2B472J	CYLND CHIP R 4.7K J 1/8W		
R81			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R82			RD41DB2B332J	CYLND CHIP R 3.3K J 1/8W		
R83			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R84 -87			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R89			RD41DB2B511J	CYLND CHIP R 510 J 1/8W		
R90 -93			RD41DB2B332J	CYLND CHIP R 3.3K J 1/8W		
R94			RD41DB2B181J	CYLND CHIP R 180 J 1/8W		
R95			RD41DB2B104J	CYLND CHIP R 100K J 1/8W		
R96			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R97 -100			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R101,102			RD41DB2B470J	CYLND CHIP R 47 J 1/8W		
R103			RD41DB2B332J	CYLND CHIP R 3.3K J 1/8W		
R105			RD41DB2B122J	CYLND CHIP R 1.2K J 1/8W		
R106			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R107			RD41DB2B122J	CYLND CHIP R 1.2K J 1/8W		
R108			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R109,110			RD41DB2B122J	CYLND CHIP R 1.2K J 1/8W		
R111			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R112,113			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R114,115			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R116			RD41DB2B331J	CYLND CHIP R 330 J 1/8W		

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R117,118 R119 R120 R121,122 R123			RD41DB2B102J RD41DB2B331J RD41DB2B102J RD41DB2B224J RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 330 J 1/8W CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 220K J 1/8W CYLND CHIP R 1.0K J 1/8W		
R124,125 R130-133 R134,135 R136,137 R138,139			RS14DB3D560J RD41DB2B102J RK73FB2A224J RD41DB2B563J RK73FB2A123J	FL-PROOF RS 56 J 2W CYLND CHIP R 1.0K J 1/8W CHIP R 220K J 1/10W CYLND CHIP R 56K J 1/8W CHIP R 12K J 1/10W		
R140,141 R142,143 R150-153 R154-157 R158-161			RK73FB2A824J RK73FB2A224J RK73FB2A224J RK73FB2A682J RK73FB2A203J	CHIP R 820K J 1/10W CHIP R 220K J 1/10W CHIP R 220K J 1/10W CHIP R 6.8K J 1/10W CHIP R 20K J 1/10W		
R162-165 R166-169 R170 R171 R172			RK73FB2A132J RK73FB2A332J RK73FB2A102J RD41DB2B102J RK73FB2A102J	CHIP R 1.3K J 1/10W CHIP R 3.3K J 1/10W CHIP R 1.0K J 1/10W CYLND CHIP R 1.0K J 1/8W CHIP R 1.0K J 1/10W		
R173 R174-177 R180-183 R184 R185			RD41DB2B102J RD41DB2B222J RD41DB2B102J RD41DB2B361J RD41DB2B683J	CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 2.2K J 1/8W CYLND CHIP R 1.0K J 1/8W CYLND CHIP R 360 J 1/8W CYLND CHIP R 68K J 1/8W		
R186 R187 R188 R189 R190			RD41DB2B361J RD41DB2B683J RD41DB2B104J RD41DB2B753J RD41DB2B474J	CYLND CHIP R 360 J 1/8W CYLND CHIP R 68K J 1/8W CYLND CHIP R 100K J 1/8W CYLND CHIP R 75K J 1/8W CYLND CHIP R 470K J 1/8W		
R191 R192 R193 R194 R195			RD41DB2B103J RD41DB2B753J RD41DB2B104J RD41DB2B474J RD41DB2B103J	CYLND CHIP R 10K J 1/8W CYLND CHIP R 75K J 1/8W CYLND CHIP R 100K J 1/8W CYLND CHIP R 470K J 1/8W CYLND CHIP R 10K J 1/8W		
R196 R197 R198 R199 R200			RD41DB2B332J RD41DB2B223J RD41DB2B184J RD41DB2B224J RD41DB2B103J	CYLND CHIP R 3.3K J 1/8W CYLND CHIP R 22K J 1/8W CYLND CHIP R 180K J 1/8W CYLND CHIP R 220K J 1/8W CYLND CHIP R 10K J 1/8W		
R201 R202 R203 R204 R205			RD41DB2B332J RD41DB2B104J RD41DB2B473J RD41DB2B823J RD41DB2B103J	CYLND CHIP R 3.3K J 1/8W CYLND CHIP R 100K J 1/8W CYLND CHIP R 47K J 1/8W CYLND CHIP R 82K J 1/8W CYLND CHIP R 10K J 1/8W		
R206,207 R210-212 R213 R214 R215			RD41DB2B223J RD41DB2B103J RD41DB2B221J RD41DB2B203J RD41DB2B183J	CYLND CHIP R 22K J 1/8W CYLND CHIP R 10K J 1/8W CYLND CHIP R 220 J 1/8W CYLND CHIP R 20K J 1/8W CYLND CHIP R 18K J 1/8W		
R216 R217,218 R219-221 R222-224 R225,226			RD41DB2B472J RD41DB2B104J RD41DB2B332J RD41DB2B123J RD41DB2B104J	CYLND CHIP R 4.7K J 1/8W CYLND CHIP R 100K J 1/8W CYLND CHIP R 3.3K J 1/8W CYLND CHIP R 12K J 1/8W CYLND CHIP R 100K J 1/8W		

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R227			RD41DB2B271J	CYLND CHIP R 270 J 1/8W		
R228			RD41DB2B224J	CYLND CHIP R 220K J 1/8W		
R229			RD41DB2B271J	CYLND CHIP R 270 J 1/8W		
R230			RD41DB2B181J	CYLND CHIP R 180 J 1/8W		
R231			RD41DB2B512J	CYLND CHIP R 5.1K J 1/8W		
R232			RD41DB2B683J	CYLND CHIP R 68K J 1/8W		
R233			RD41DB2B124J	CYLND CHIP R 120K J 1/8W		
R234			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R235			RD41DB2B332J	CYLND CHIP R 3.3K J 1/8W		
R236, 237			RD41DB2B163J	CYLND CHIP R 16K J 1/8W		
R238, 239			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R240			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R241			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R242, 243			RD41DB2B103J	CYLND CHIP R 10K J 1/8W		
R244			RD41DB2B153J	CYLND CHIP R 15K J 1/8W		
R245			RD41DB2B101J	CYLND CHIP R 100 J 1/8W		
R246			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R247			RD41DB2B753J	CYLND CHIP R 75K J 1/8W		
R248			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R250, 251			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R252, 253			RD41DB2B334J	CYLND CHIP R 330K J 1/8W		
R254, 255			RD41DB2B273J	CYLND CHIP R 27K J 1/8W		
R256, 257			RD41DB2B221J	CYLND CHIP R 220 J 1/8W		
R258-261			RD41DB2B473J	CYLND CHIP R 47K J 1/8W		
R262, 263		*	RS14KB3AR47J	FL-PROOF RS 0.47 J 1W		
R264			RD41DB2B472J	CYLND CHIP R 4.7K J 1/8W		
R266			RD41DB2B223J	CYLND CHIP R 22K J 1/8W		
R267			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R268		*	RD41DB2B3R0J	CYLND CHIP R 3.0 J 1/8W		
R271			RD41DB2B333J	CYLND CHIP R 33K J 1/8W		
R290-293			RD41DB2B102J	CYLND CHIP R 1.0K J 1/8W		
R294			RD41DB2B222J	CYLND CHIP R 2.2K J 1/8W		
R320			RK73FB2A123J	CHIP R 12K J 1/10W		
R321			RK73FB2A273J	CHIP R 27K J 1/10W		
R322			RK73FB2A123J	CHIP R 12K J 1/10W		
R323			RK73FB2A273J	CHIP R 27K J 1/10W		
R401			RK73FB2A132J	CHIP R 1.3K J 1/10W		
VR1			R12-1054-05	TRIMMING P8T. (1K) AUTO VR		
S1	2E		S31-1011-05	SLIDE SWITCH		
PH1, 2			T95-0029-05	OPTO ISOLATOR		
D2 -16			RLS-73	DIODE		
D19 -24			RLS-73	DIODE		
D25			DSM1A1	DIODE		
D26			RLS-73	DIODE		
D27			DA204K	DIODE		
D28, 29			RLS-73	DIODE		
D30			ERA15-01Y1	DIODE		
D31			RLZJ5.6	ZENER DIODE		
D32			DA204K	DIODE		
D35			RLZJ10	ZENER DIODE		
D36 -39			RLS-73	DIODE		
D40			RD6.2JS(B2)	ZENER DIODE		
D41			RLZJ10	ZENER DIODE		

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D42 ,43 D44 ,45 D46 D47 ,48 D81 -84			MFC08D300M DSM1A1 ERA15-01Y1 RLZJ9. 1 RLS-73	SURGE ABSORBER DIODE DIODE ZENER DIODE DIODE		
D85 D86 IC1 IC2 IC3			DL51585 RLS-73 751086-599-1B 7507HG-517-22 PST520D	DIODE DIODE IC(MICROPROCESSOR) IC(MICROPROCESSOR) IC(LOW POWER RESET)		
IC4 IC5 IC6 IC7 -11 IC12			KC-821 LB1630 TC9188F AN6556S NJM2903M	IC(MECHANISM DRIVER) IC(MOTOR DRIVER) IC(2CH ELECTRIC VOLUME) IC(OP AMP X2) IC(COMPARATOR X2)		
IC13 IC14 IC15 IC16,17 IC18		*	AN6556S NJM78L02UA AN6554NS AN6556S TA7705F	IC(OP AMP X2) IC(VOLTAGE REGULATOR/ +12V) IC(OP AMP X4) IC(OP AMP X2) IC(PREAMP FOR AUTO REVERSE)		
Q1 Q2 Q3 Q4 Q6		*	DTC124EK DTA114TK DTC124EK DTA124EK DTC143EK	DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q7 Q9 -11 Q12 Q13 Q19 -21			DTC124EK DTC124EK DTA124EK DTC124EK DTC143TK	DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q22 Q23 Q24 Q25 Q26			2SC2412K DTA124EK DTA144EK DTA124EK DTC124EK	TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q30 Q31 -34 Q35 ,36 Q37 ,38 Q39 ,40			DTC143TK DTC124EK 2SD1055F 2SB822F 2SB1188	DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q41 Q42 Q43 Q44 Q46 -49			2SD973 2SC2412K 2SD1406 2SC2412K DTA114TK	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR		
Q50 -53 Q54 Q55 Q60 -62 Q63			2SD1757K 2SA1037K 2SC2412K DTC124EK 2SD1766	TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR		
Q64 Q65 Q66 Q67 Q70 ,71		*	2SC2412K DTC124EK FMW1 2SA1037K DTC124EK	TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR		

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## PARTS LIST

× New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
Q72 ,73 Q74 ,75 Q76 ,77 Q78 ,79 Q83 ,84  Q85 Q86 Q87 Q88			2SB941 2SC2412K 2SA1037K DTC124EK 2SB822F  2SC2412K DTA124EK DTC124EK 2SD1055F	TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR  TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR		
<b>TUNER ASS'Y (W02-0667-05)</b>						
D1 -3 D1 -3 FET1 FET1 TR1 -3  TR1 -3 TR1 -3			SVC321 1SV149 2SK163 2SK523 2SC2619  2SC2716 2SC2814	DIODE DIODE FET FET TRANSISTOR  TRANSISTOR TRANSISTOR		
<b>FM FRONT-END ASS'Y (W02-0768-05)</b>						
D1 D2 -S FET1			1SV172 1SV103 3SK126	DIODE DIODE FET		
<b>SCREW SET (N99-0212-25)</b>						
- - -			NO9-1416-05 NO9-1885-05 N14-0156-05	SEMS SCREW (Ø5X16) SEMS SCREW FLUNGE NUT (M5)		
<b>SCREW SET (N99-0248-15)</b>						
- -			NO9-1572-05 NO9-1885-05	FLAT SCREW (Ø4X6) SEMS SCREW (Ø4X8)		
<b>CASSETTE MECHANISM ASS'Y (D40-0341-05)</b>						
4  5 6 7 8 9  10 11 12 13 14  15 16 17 18 19  20 21 22 23 25  26 27 28	2A, 3A  3A, 3B 3A 3A 3B 2A  3B 1A 1B 2B 2B  1B 3B 1A 1B 2B  2B 1B 2B 3A 2B  3B 3A 3A		BO9-0050-08  D01-0072-08 D03-0242-08 D03-0246-08 D10-1506-08 D10-1507-08  D10-1508-08 D10-1509-08 D10-1511-08 D10-1512-08 D10-1513-08  D10-1514-08 D10-1515-08 D10-1516-08 D10-1517-08 D10-1518-08  D10-1519-08 D10-1520-08 D10-1521-08 D10-1522-08 D12-0110-08  D13-0287-08 D13-0288-08 D13-0289-08	CAP (REEL)  FLYWHEEL ASSY REEL DISK ASSY REEL DISK (CONTROL SHASSIS) LEVER (DOWN B) LEVER  LEVER (DOWN A) LEVER LEVER (DAH C) LEVER (MUTING) LEVER (T. ADV R)  LEVER (T. ADV) LEVER ASSY (DOWN C) LEVER ASSY LEVER ASSY LEVER ASSY (DAH A)  LEVER ASSY (DAH B) LEVER ASSY (T. ADV LEVER F) LEVER ASSY (T. ADV) LEVER ASSY (FR) CAM  GEAR (FWD) GEAR GEAR		

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29	3A		D13-0290-08	GEAR		
30	3A		D13-0291-08	GEAR		
31	3A		D13-0292-08	GEAR		
32	3A		D13-0293-08	GEAR		
33	3A		D13-0294-08	GEAR ASSY (FR)		
34	3A		D13-0295-08	GEAR ASSY (PLAY)		
35	1A, 3B		D14-0128-08	ROLLER		
36	1B		D14-0129-08	PINCH ROLLER ASSY		
37	1B		D14-0133-08	ROLLER (HEAD)		
38	2B		D15-0238-08	PULLEY		
39	3B		D16-0122-08	BELT		
40	3B		D16-0123-08	BELT		
41	1B, 2B		D90-0028-08	STEEL BALL		
51	1B		F10-0570-08	SHIELDING PLATE (HEAD)		
55	2B		G01-1716-08	COMPRESSION SPRING (T. ADV)		
56	2B		G01-1717-08	TENSION SPRING		
57	1B		G01-1718-08	TORSION COIL SPRING		
58	1B		G01-1719-08	COMPRESSION SPRING (F)		
59	1A		G01-1720-08	COMPRESSION SPRING (R)		
60	3B		G01-1721-08	TENSION SPRING		
61	2A, 2B		G01-1722-08	TENSION SPRING		
62	1A		G01-1723-08	TENSION SPRING		
63	2B		G01-1724-08	TENSION SPRING		
64	3A		G01-1725-08	TORSION COIL SPRING		
65	1A		G01-1726-00	COMPRESSION SPRING		
66	2A		G01-1754-08	TENSION SPRING		
67	1B		G02-0369-08	FLAT SPRING		
68	1B		G09-0058-08	SPRING		
69	1A		G09-0059-08	SPRING		
70	3A		G09-0060-08	SPRING		
78	1B		J25-4726-08	PRINTED WIRING BOARD		
79	3A		J25-4867-08	PRINTED WIRING BOARD		
80	1A		J19-2556-08	HOLDER ASSY		
81	2A		J19-2557-08	HOLDER ASSY		
82	2A		J21-3684-08	MOUNTING HARDWARE ASSY		
84	1B		J30-0211-08	SPACER		
85	1A, 1B		J31-0258-08	COLLAR		
86	1A		J32-0298-08	BOSS		
87	2A		J90-0156-08	GUIDE		
100	2B, 3B		N19-0374-04	FLAT WASHER (Ø3X/1.2X0.25)		
101	2A, 2B		N19-0955-08	FLAT WASHER (Ø4.5XØ1.7X0.4)		
102	2A, 3A		N19-0956-08	FLAT WASHER (Ø2.5XØ1.0X0.25)		
103	3A		N19-0957-08	FLAT WASHER (Ø2.5XØ1.6X0.25)		
104	2A, 3A		N19-0958-08	FLAT WASHER (Ø3.2XØ1.7X0.25)		
105	2B		N19-0959-08	FLAT WASHER (Ø5X/2.5X0.13)		
106	2B, 3B		N19-0960-08	FLAT WASHER (Ø3.5XØ2.1X0.13)		
107	3A		N19-0961-08	FLAT WASHER (Ø3.2XØ1.7X0.25)		
108	1B, 2B		N24-3012-41	E TYPE RETAINING RING (1.2)		
109	1A, 3B		N24-3015-41	E TYPE RETAINING RING (1.5)		
110	2B		N24-3016-08	E TYPE RETAINING RING		
A	3A		N09-1534-08	SCREW (M1.4X3)		
B	1B		N09-1562-08	SCREW (M1.2X2)		

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S901	2B		S46-1064-08	LEAF SWITCH (MUTING)		
S902	2A		S46-1065-08	LEAF SWITCH		
S903	2A		S31-1010-08	SLIDE SWITCH (POWER)		
S904	2A		S46-1066-08	LEAF SWITCH		
120	1B		T31-0031-08	PLAYBACK HEAD		
121	3A		T94-0088-08	SOLENOID		
M801,802	2A		T49-0019-08	MOTOR (FF/REW,FWD/REV)		
M901	2B		T42-0077-08	DC MOTOR ASSY		

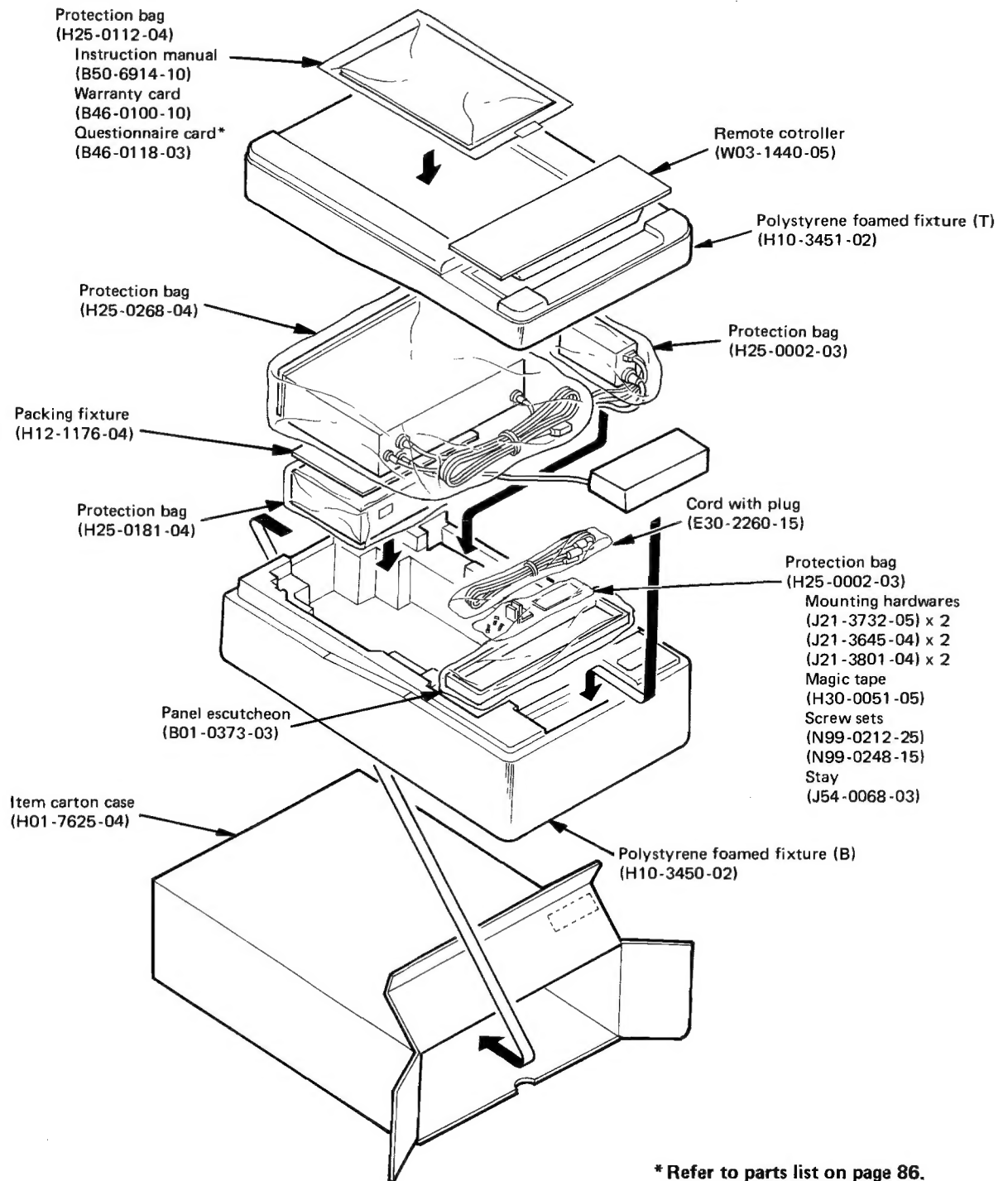
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## PACKING



**\* Refer to parts list on page 86.**

## SPECIFICATIONS

**FM Tuner Section**

Frequency range .....	87.9 MHz ~ 107.9 MHz
Channel Space .....	200 kHz (For * America) 100 kHz (For * South East Asia)
Usable Sensitivity .....	12.0 dBf (1.1 $\mu$ V/75 ohms)
50 dB Quieting Sensitivity .....	15.2 dBf (1.6 $\mu$ V/75 ohms)
Frequency Response ( $\pm 1$ dB) .....	30 Hz ~ 15 kHz
Signal to Noise Ratio .....	75 dB
Alternate Channel Selectivity .....	80 dB
Capture Ratio .....	1.5 dB
Image Response Ratio .....	70 dB
IF Response Ratio .....	75 dB
Stereo Separation (1 kHz) .....	40 dB

**AM Tuner Section**

Frequency Range .....	530 ~ 1620 kHz (For * America) 522 ~ 1611 kHz (For * South East Asia)
Channel Space .....	10 kHz (For * America) 9 kHz (For * South East Asia)
Usable Sensitivity .....	28 dB (30 $\mu$ V)

**Cassette Deck Section**

Tape Speed .....	4.76 cm/s
Wow and Flutter .....	0.06% (WRMS)
Fast Winding Time (C-60) .....	120 sec
Frequency Response (120 $\mu$ S) .....	20 Hz ~ 20 kHz ( $\pm 3$ dB)
(70 $\mu$ S) .....	20 Hz ~ 22.5 kHz ( $\pm 3$ dB)
Stereo Separation (1 kHz) .....	45 dB
Signal to Noise Ratio .....	
NR OFF .....	62 dB
Dolby B ON .....	71 dB
Dolby C ON .....	76 dB
dbx ON .....	86 dB

**Equalizer Section**

Equalizer Action .....	$\pm 12$ dB at 60 Hz, 120 Hz, 250 Hz, 500 Hz, 1 kHz, 3.5 kHz, 10 kHz
Frequency Response .....	20 Hz ~ 60 kHz, ( $-3$ dB)
Total Harmonic Distortion .....	0.01%

**Audio Section**

Preamp Output .....	Normal: 300 mV/10 k ohms load High: 1.0 V/10 k ohms load
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**General**

Operating Voltage (GND) .....	14.4 V (11 ~ 16 V allowable)
Current Consumption .....	0.8 A at Rated Power
Body size (W x H x D) .....	180 x 50 x 155 mm (7-1/16 x 1-15/16 x 6-1/8 in.)
Weight .....	2.2 kg (4.9 lb)

Received only in the countries indicated with \*.

Specification subject to change without notice.

**Note :**

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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